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Richard Gibb

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THE

FARRIER'S New Guide.

Containing, First,

The ANATOMY of a HORSE; being an exact and compendious Deſcription of all his Parts; with their Actions and Uſes: Illuſtrated with FIGURES curiouſly Engrav'd on COPPER-PLATES.

SECONDLY,

An Account of all the DISEASES incident to HORSES, with their *Signs*, *Cauſes*, and *Method of Cure*; wherein many Defects in the FARRIER's Practice are now carefully ſupply'd, their Errors expos'd and amended, and the Art greatly improv'd and advanced, according to the lateſt Diſcoveries.

THE

Whole interſpers'd with many curious and uſeful Obſervations concerning FEEDING and EXERCISE, &c.

The EIGHTH EDITION corrected.

By *W. GIBSON.*

LONDON:
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THE PREFACE.

AS the general Uſe and Service of Horſes has render'd them more worth the Notice and Regard of Mankind, than any other of the Brute Creatures; ſo there has in moſt Ages of the World, been a more than ordinary Care taken, not only to model and fit them for their reſpective Services, but alſo of their Breed and Preſervation: And we find Horſes were of ſo great Account with the Ancients, that even *Ariſtotle*, *Xenophon*, *Pliny*, and others of greateſt Genius among them, have beſtow'd ſome of their Labours that Way, being ſenſible how much a good and ſerviceable Breed of Horſes conduc'd to the Benefit of the Community; both in Peace and War: Neither have the Moderns been leſs induſtrious in all theſe Matters, but have made many excellent Improvements in *Horſemanſhip*: For about the Time that Painting, Sculpture, and other Arts were reviv'd in *Italy*, the Art of Riding, and of perfecting Horſes for the Wars, and in all uſeful and genteel Exerciſes, was then alſo cultivated, and afterwards improv'd by *Frenchmen*, who went to *Rome* and *Naples* on Purpoſe to be inſtructed therein. Tho' the Perfection to which that Art is now arriv'd, is by all the ableſt Maſters throughout *Europe*, juſtly aſcribed to the noble Duke of *Newcaſtle*, who

was not only himself an excellent Horseman, but the best Judge that ever wrote upon the Subject.

But all this while it does not appear that there has been any Provision made for the Cure of the Infirmities and Accidents to which that noble and generous Creature is exposed, suitable to what his Services really deserve. For albeit the same Persons who were the first Improvers of Horsemanship, were no less studious of their Diseases, and were also the first of all the Moderns, who seem to have writ professedly of them; yet it must be owned their Writings are more like Systems of old *Astrology*, than as if they had been composed for the Cure of Horses: Neither can this be thought very strange, if it be considered, that these Authors had no other Means of arriving at their Skill, but by adding from Books of Physick and Surgery, what they judg'd necessary to perfect the common and received Practice of Farriers, which in those Times was of a very masculine Kind, and had been handed down through many ignorant Ages, without any other Regulation, than what had obtain'd by Rote and Custom.

Now it is very easy to conceive, how those who are uninstructed in the Principles of any particular Art, may be misled in what they copy and borrow from it; for as they are not Judges themselves, they will neither be apt to make choice of the best Author; nor can it be supposed, if they did, that they should mend the Matter very much, in a Science so much complicated as that of Physick, *&c.* and which, by the Ignorance of those and the preceeding Times, was itself embarrassed with many idle and whimsical Dreams, not to be met with, or at least depended on by ancient Writers, and which have been absolutely rejected since the modern Discoveries have cleared the Way to true Knowledge.

And that this was the Case of these Gentlemen who first put Pen to Paper on the Diseases of Horses, is evident from their unjudicious Collections; for in them

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we have all the Refuſe of phyſical Authors; and moſt Books that are at this Day extant upon the Subject, have been form'd upon the Writings of thoſe Perſons; ſo that the Cure of Horſes ſeems to be but very little underſtood, notwithſtanding all the Care and Pains that has been taken to perfect it.

Solleyſell was ſo ſenſible of this, and of the bad Cuſtoms which had obtained among the Farriers of *France* in his Time, that it put him upon a more diligent Search into the Buſineſs, by conſulting the beſt Authors of Phyſick and Surgery, as himſelf takes Notice; whereby he has indeed not only deliver'd a more ſafe and regular Practice, than any that went before him, but has alſo introduc'd Methods altogether new, with a great Variety of Medicines, which before had never taken Place in the Diſeaſes of Horſes: But yet, for all this, he was himſelf infected with many of the Errors of his Predeceſſors; for he is ſo ſcrupulous as to Times and Seaſons, and ſo much ty'd up to Cuſtom, that it even renders his Methods very impracticable in many Circumſtances, and as he was not rightly acquainted with the *Animal Oeconomy*, he has accounted for many of the Diſeaſes, not from the true Mechaniſm of the Body of a Horſe, but in a ſpeculative and abſtracted Way; which is ſo far from leading any one into the Nature and Cauſe of Diſeaſes, that it muſt rather bewilder his Pupils, and bring them farther into the dark.

Nor are theſe the only things wherein that Author is blameable; but if we examine into his Method of Cure, it is ſo imperfect and perplex'd in many Places, by frequent Digreſſions, that a Man muſt be well acquainted with the Subject, or at more than ordinary Pains to reap any great Advantage from it: And as to his Medicines, tho' many of them are, no doubt, extraordinary good, and very well adapted to their ſeveral Intentions; yet it is very plain, he has inſerted a Number of others, with long and tedious

Encomiums on their Virtues and Excellencies, which upon the ſtricteſt Examination, has proceeded more from a fond Opinion he has had of them, than from any real Virtues in them : Beſides, that many of them are ſo coſtly, that in the Proceſs of ſome regular Cures, they muſt exceed the Price of any ordinary Horſe.

Neither has he been able to obviate the Objections, which we find have been made to himſelf, for inſerting ſuch vaſt Numbers of Remedies; for what he alledges concerning the Variety of Conſtitutions, is very little to the Purpoſe, ſuch a Medicine of the ſame Intention need only be made ſtronger or weaker in the principal Ingredients ; or if any Alteration be neceſſary, that ought to depend upon a Change or Complication of Symptoms ; all which ſhould be clearly explain'd by thoſe who deliver Inſtitutions of Cure. And as for his Chymical Proceſſes, we look upon many of them as unneceſſary Implements, which only help to fill up his Book, and ſhew more of Pomp and Oſtentation than any real Uſe ; eſpecially ſince there are but few of them which vary much from the common receiv'd Forms; and if it was otherwiſe, they could not eaſily be comply'd with by any who are unacquainted with the Chymiſt's Art, or unprovided with the Inſtruments that are proper to make them.

But if *Solleyſell*, who is deſervedly reputed the beſt Author, was even faulty in theſe Reſpects, notwithſtanding all the Pains he had taken; What can we hope from thoſe of leſs Learning and Ability, who have only deliver'd things at ſecond-hand ? Of theſe, all Nations have produced ſufficient Store, whoſe Precepts have been as much, if not more, followed than original Authors; but none have been ſo much abus'd that Way as ourſelves ; for altho' we have had the Reputation of improving many Arts beyond what others have done ; and tho' that of Horſemanſhip was

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even brought to its greateſt Perfection, by the noble Perſon whom we have already taken Notice of; yet we have hardly one who has treated of the Diſeaſes of Horſes in any tolerable Way. *Blundevil*, who was the firſt of any great Repute amongſt us, is now almoſt quite forgot. As for *Markham* and *De Grey*, with others of later Date, they were only Copiers from him, as himſelf was alſo a Copier and Tranſlator from the *Italians*; and what theſe Authors have with ſo much Aſſurance taken from the common *Rote*, and added as their own, is, generally ſpeaking, the moſt inſignificant of any thing they have delivered; ſo that it is no Wonder, if the Practice of thoſe be very abſurd, who tie themſelves up to their Rules.

The Want of proper Helps is certainly a very great Diſadvantage, not only to the *Farriers*, but to all thoſe who are intereſted in Horſes; for tho' they may practiſe with Certainty enough in ſome Operations, and in many common Accidents that require only outward Applications, yet they muſt needs be at a great Loſs in moſt Diſeaſes, where the Maſs of Blood is affected; and therefore, we find in all ſuch Caſes, their main Recourſe is to Bleeding and Purging; and whether that be proper or not, they neither know themſelves, nor can their Books inform them: And when a Horſe gives Signs of inward Sickneſs, the Book (which is chiefly made up of a Parcel of inſignificant Receipts) furniſhes them with a Cordial Drink, compos'd of ſome Spices, or a few Herbs to be boil'd in Ale or White-wine; and if one Drench or two does not make a Cure, they are at a great Loſs what to do next: Having no other Notion of Medicines, but as if they work'd by a Sort of Magick.

That this is the common and ordinary Way of Practice among Horſes, every one knows. We cannot however but own, there are many Gentlemen, and alſo ſome of the ableſt *Farriers*, who have not

confin'd themſelves ſo much to Cuſtom, but have fallen upon better Methods than thoſe generally preſcrib'd; and we find ſeveral very good Remedies handed from one to another, which are not to be met with in Books; but yet, as moſt are unacquainted with the Requiſites neceſſary for the right Adminiſtration of theſe Remedies, they often prove as Weapons in unskilful Hands, which may either do Good or Hurt, as they happen to be right or wrong apply'd; and if there be ſome who know how to apply them better than others, yet while their Methods are not communicated to the Publick, and thereby render'd of general Uſe, the Art can be but little advanced.

From all which Reaſons, and the frequent Complaints of thoſe who are the greateſt Sufferers by the Deficiency of this Art, we have been induced to propoſe this our *New Guide*; wherein we have not only deliver'd an Account of all the Diſeaſes incident to Horſes, with the Method of Cure, but alſo the *Anatomy of a Horſe*; the Knowledge of which being as neceſſary to Farriers, as that of the Human Body to Phyſicians and Surgeons; and we are in Hopes it will meet with the more ready Reception, becauſe the Attempts that have been made of this Kind already by Sig. *Ruini*, and Mr. *Snape*, late Farrier to King *Charles* II. have both been in ſome Meaſure render'd fruitleſs; the firſt having writ in a Language unknown to us, and at a Time when this Art was in a Manner in its Infancy; and the other having never publiſh'd any thing profeſſedly of Diſeaſes (tho' he fully intended it) but only his Volume of Anatomy, which, beſides that it is very rarely to be met with, is alſo ſo large, and incumbred with ſo many things foreign to the Purpoſe, as makes it, in a great Meaſure, unprofitable to thoſe for whom it was principally intended.

And

And therefore, that we might avoid theſe Inconveniencies, we have in our Anatomical Part wholly ſtudied the Benefit of ſuch as are unacquainted with the Subject, having deſcrib'd all the Parts of a Horſe, with their ſeveral Uſes, in as ſhort and conciſe a Manner as poſſible, and at the ſame time omitted nothing that is abſolutely material; and we have not only rectified ſeveral Miſtakes in Mr. *Snape*, but have added many Things from the modern Diſcoveries, which are not to be met with in that Author, and which are very neceſſary to the Knowledge of Diſeaſes. Neither need we make any Apology for the hard Appellations of ſome of the Muſcles, other than what Mr. *Snape* has already done, *viz.* That whereas moſt of them have the ſame Uſe with thoſe of the human Body, he therefore thought it prudent to retain the ſame Names, believing it would be too aſſuming in him to impoſe others.

The Figures of the ſeveral Parts, are by all own'd ſo neceſſary, that we need not ſay any thing to recommend them, they being conſtant Helps, not only to thoſe who are Strangers to the Subject, but alſo to ſuch as are acquainted therewith; and tho' we are in this reſpect chiefly indebted to the Induſtry of Mr. *Snape*, as he was to *Ruini*, for many of them, yet we doubt not of Approbation in the Choice we have made, as we have not any that are uſeleſs, but ſuch as are of moſt Importance.

As to our *Treatiſe of Diſeaſes*, it is partly the Reſult of ſome Obſervations that were made while I attended the Army, and partly of ſome that have been made ſince; during which time, we have carefully taken notice of all thoſe things, both in Books and in Practice, that were the chief Hindrances to the Advancement of the Farrier's Art; and what Steps we have taken to put it upon a better Footing, will be judged reaſonable by ſuch as have peruſed Mr. *Snape*'s Book, eſpecially thoſe ſhort Digreſ-

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ſions, where he has accounted for ſome Diſeaſes that were the leaſt known by Farriers. The ſame Method Mr. *Snape* has obſerved in theſe few, we have carefully followed throughout the whole, which although it may ſeem ſomewhat difficult at firſt View, to thoſe who are unacquainted with the *Animal Oeconomy*; yet as all is founded upon the Make, Frame, and Diſpoſition of a Horſe's Body, and is therefore plainly demonſtrable to Senſe, it will in the End be found more eaſy than the uſual Methods, that have been only built upon Figment and Fancy.

But, that the Reader may the more readily overcome thoſe Difficulties, we have endeavour'd to deſcribe all the Diſeaſes in a Way that is the moſt familiar and intelligible, having ranked thoſe together that have the neareſt Dependence upon each other: and in ſuch a Manner, that the underſtanding of one, may lead him inſenſibly into the Knowledge of another: A Method not hitherto obſerved, or rightly underſtood, by any of our Authors. We have likewiſe been more than ordinarily careful, in diſtinguiſhing, with reſpect to Signs and Cauſes, and in providing for the ſeveral Accidents that may happen, than which nothing conduces more to the Cure and Preſervation of Brute Creatures, who are incapable of declaring their Infirmities; and becauſe many of the Diſeaſes of Horſes have a near Affinity with thoſe of the human Body, and as the comparing the one with the other muſt needs tend very much to the Advancement of this Art, we have therefore taken Notice of that in many Particulars, ſo far as the Mechaniſm of a Horſe may occaſion the ſame Symptoms and Accidents; and wherever they differ, we have endeavoured to put it in as clear a Light as poſſible, and have accordingly accommodated the Method of Cure.

And as the right Adminiſtration of proper Remedies is of no leſs Importance, we have taken particular Care in that reſpect, having not only, in all Caſes, in-

inſerted ſuch as are known to be of moſt Efficacy, but alſo laid down the Precautions neceſſary in all their ſeveral Intentions; and herein we have ſtudied both the Eaſe and Profit of the Practitioner, by freeing him of thoſe long and tedious Compoſitions, wherewith moſt Books ſo much abound, and which are chiefly made up of a Number of uſeleſs and inſignificant Ingredients: But theſe Things I have conſidered in a Treatiſe apart, concerning the Medicines proper for Horſes, which is a Supplement to this, and has met with the Approbation of the beſt Judges.

As to the Defects and Errors we have already taken Notice of in the common and ordinary Practice; as alſo thoſe committed by the Abuſe of Tents, the Application of greaſy Dreſſings, and many other Things too tedious to be inſerted here, we hope, we need make no Apology for ſo doing, ſince it will appear to any one who ſhall peruſe the following Treatiſe, that our Meaning in this was not to find Fault; but in order to their Amendment. For where-ever we have obſerved any thing in the received Method, or in any Author, ſupported by Experience, and agreeable to the Principles of Art, we have been ſo far from rejecting it, that we have rather recommended it to the World by ſuch Explanations, as we judged neceſſary to render it more intelligible and uſeful.

All that I think neceſſary to perfect this Subject, will be contained in a Treatiſe which will be ſhortly publiſhed, containing the Order and Oeconomy that is neceſſary in the Diet and Exerciſe of Horſes.

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THE

THE ANATOMY OF A HORSE.

The Introduction.

THE Bodies of all Quadrupeds, as well as Men, are compoſed of different Parts, which are adapted to their ſeveral Functions: Some are ſolid, as the Bones and Cartilages; others are ſoft, as the Glands and Muſcular Fleſh; and ſome are of a middle Nature, as the Ligaments of the Joints, and Tendons of the Muſcles. But whether their particular Structure be looſe or ſolid, or between both, it is very certain that all are made up of ſmall Fibres or Threads. This is ſo plainly obſerveable in the ſoft Parts, that it needs no manner of Proof; ſince every one muſt have taken notice, in tearing Fleſh aſunder, that it is compos'd of little Parcels or Bundles, and theſe Parcels may again be divided into others which are leſs, and afterwards into ſingle Threads, which are infinitely ſmaller than a Hair: Nature has alſo obſerv'd the ſame Oeconomy in the Structure of the hard Parts; for when we cut a Bone aroſs, all the Poruli, or little Holes, which form the Interſtices of its Fibres, are, in moſt Parts of it, plainly perceivable; and if it be cut lengthways, their Direction and Courſe is no leſs manifeſt.

But of all the different Subſtances whereof an Animal Body is compoſed, that which Anatomiſts call a Membrane, is, next to a Fibre, the moſt ſimple in its Structure,

ture, it being a thin expanded Substance, which has Length and Breadth, without much Thickness; so that it seems only to be made up of single Threads, laid lengthways and across, like a fine Web. *We find some of them pretty thick, especially towards their Origin; but others much thinner than the* Film *of an Egg: The whole Body is wrap'd up in one of these, and every particular Part has a membranous Cover, which preserves it from the Injuries it would be expos'd to, from those Parts which lie next it. Some Parts are involv'd in double Membranes, as the* Brain, *and* Pith *of the Back,* &c. *which are very soft and delicate, and could not be easily preserv'd by a single one.*

But besides their Office of covering and defending all Parts of the Body, some of them serve as Bags *or* Cases, *for* Food *and* Excrements; *others are form'd into Conduits, for the Blood and animal Juices. But some of these being partly muscular, and partly membranous, they may be properly said to be of a mix'd Nature, as are most of the Muscles, and many other Substances throughout the Body.*

The Muscles *are made up of* fleshy *and* tendinous *Fibres; which kind of Structure is necessary to their Action, they being the Instruments of Motion. Almost all Muscles are fleshy and soft in the Middle, and for that Reason are capable of being contracted and dilated; for if they were otherwise, it would be impossible for any Creature to move: whereas by the Figure they are of, we find 'em ready to answer every Inclination of the Mind, without Pain or Stiffness. The Muscles are of different Figures, some flat, as those on the Rim of the Belly; others more round, as those of the Thighs and Legs; some of which, towards their Insertions, terminate in a strong, nervous, sinewy Substance, called a* Tendon.

A Ligament *is more compact and firm than a* Tendon, *but not altogether so hard as a* Cartilage. *It is that Substance which ties the Joints together; whereof some are round, as those which we observe fastned to the head of a Bone, and the inside of its Socket; others are flat, and cover the Joins like so many pieces of Leather nail'd on, to keep the two Bones from falling asunder, and to preserve an Uniformity in their Motion.*

A Cartilage, *or* Gristle, *which we observe more or less at the Ends of most Bones, is harder and less pliable than the Ligaments: These being of a smooth Surface, and moderately*

moderately thick, are a Defence to the Ends of the Bones, which are more hard and brittle; and if they were not thus fortify'd, might therefore be worn and abraded by their Motion.

The Bones *are of the most hard and compact Substance of the whole Body; they are without Sense, as are also the Ligaments and Cartilages, otherwise they would be unfit to answer their particular Functions: But, notwithstanding their Insensibility, if any of them happen to be diseas'd, they may cause Pain, and create a great deal of Trouble.*

As the Bones are, of all the Parts which compose an animal Body, the most solid, the Glands, *or* Kernels, *are reckon'd among the softest; being curious Bundles of Vessels, which are infinitely small, and laid closely together, in many Circumvolutions and Turnings: From some of these are separated Excrements, and from others Juices, which have their peculiar Uses, as will be shewn hereafter.*

The Veins, *and* Arteries, Nerves, *and* Lymphatick *Vessels, are the Conduits and Pipes, through which all the liquid Juices of the Body do pass. The* Arteries *are Vessels which carry the Blood from the Heart to the Extremities, and the* Veins *are the Chanels which carry back that Portion of it, which is more than sufficient for the Nourishment of the particular Members. The* Nerves *are of a compact Substance, like so many tough Cords, of a white Colour, and different Sizes, some being pretty large, others infinitely small; and tho' they seem to be solid and imperforate, that is to say, without any visible Bore or Cavity in them, yet it is very certain they carry the animal Spirits from the Brain into all Parts of the Body; and are the Instruments which communicate all Sensations to the Imagination. The* Lymphatick *Vessels are of a more thin Texture, and carry a clear transparent Liquor, which is also subservient to the Functions of Nature.*

In short, all the Parts of the Body, whether those that are hard, or those which are denominated soft Parts, are nourished by Blood, and their peculiar Juices produc'd of Blood: Neither is it improbable, that the whole animal Frame is compos'd of the several Modifications of Veins, Arteries, Nerves, and Lymphatick Vessels.

These Things being premised, for the Benefit of such as are Strangers to the Study of Anatomy; I shall now proceed to handle the Subject particularly, and take every Part as it lies in its proper Order.

CHAP. I.

Of the Parts which inveſt and cover the whole Body.

§. I. *Of the Hair, Scarfskin, Hide, and Fleſhy Pannicle.*

The Hair. IN deſcribing the Parts of a Horſe, the firſt Thing that preſents to our View, is the *Hair*, which may not improperly be called the uppermoſt Cover of the whole Body. It will be very little to our purpoſe to ſpend time about its Production, or how it comes to be of ſo many different Colours; I ſhall therefore proceed to obſerve, that the Hair is both an Ornament and a Defence to all Animals. That which we call his Coat, is not only agreeable to the Eye in a plump young Horſe, but a Defence from the Injuries of Cold and Heat, and the Accidents to which he would be often expos'd, in his feeding among Shrubs and Buſhes; and that which grows out to ſome length on the Footlock, is a no leſs Defence to that prominent Part, when he travels on ſtony Ways, or in froſty Weather, when the Roads are cruſted, which otherwiſe would be very much expos'd to Wounds and Bruiſes. As for the Main, Tail, and Foretop, they add greatly to the Beauty of a Horſe, and are a ſuitable Decorement to a Creature of ſo much Fire and Mettle.

The Cuticula, *or Scarfskin.* The firſt fleſhy Tegument, or Cover, is the *Scarfskin*, and is that which riſes ſo eaſily into a Bliſter, by being pinch'd or ſcalded; it is not endu'd with any tender Senſation, but will bear the Touch without Pain; it is produc'd from the Hide, which it involves and covers on all Parts, and has from thence its Nouriſhment. Its Uſe is not only to cover the true Skin, and defend it from thoſe painful Senſations to which it would be expos'd, as we daily obſerve, when it is fretted off; but as it reſembles a curious Net-work, and is full of little Holes or Pores, it is thereby ſuited to give way to the excrementitious Matter which continually exhales from the Body.

The Hide. The next common Covering is the *Skin*, (properly ſo call'd) or *Hide*, which lies immediately under the other. It is nouriſh'd with Veins, Arteries,

teries, &c. and is alſo porous for the Paſſage of Sweat, or other perſpirable Matter, which is ſeparated from a vaſt number of little Glands, which lie on the Inſide of it; and as the Scarfskin is a Defence to the Hide, ſo the Hide is a Defence to thoſe other Parts which lie under it.

The fleſhy Pannicle.

Underneath the Skin is plac'd the fleſhy *Pannicle*, which is muſcular, and helps to draw the Skin into Wrinkles, by which means a Horſe throws off the Duſt, Flies, or other Things that hurt him. It is alſo nouriſh'd with its proper Veins and Arteries, &c. and beſides its peculiar Uſes, it ſerves, in concert with the Skin, to defend the Body from external Injuries, *viz.* by keeping it warm in Winter, and preventing a too great Exhalation of the Spirits in hot Weather.

§. II. *Of the Fat and common Membrane of the Muſcles.*

The Fat.

Beſides theſe Teguments abovemention'd, there is the *Fat*, and common *Membrane* of the Muſcles. The Fat which lies between the fleſhy Pannicle and the ſaid Membrane, is diſtinguiſh'd from that which covers the Caul, by its oilineſs, and is ſaid to be generated of the more unctuous Particles of the Blood, working thro' the Veſſels, and detain'd there by the cloſeneſs of the ſaid Pannicle. It is not one continu'd Covering in Horſes, as in Bullocks, and ſome other Animals, but chiefly fills up the Interſtices of the Muſcles externally, and is not only a Defence, as the other Teguments are, but ſerves to make a Horſe look plump, ſmooth, and beautiful. How far it is capable of being again converted into Nouriſhment, I ſhall not offer here to determine.

The common Membrane of the Muſcles.

As to the Membrane of the Muſcles, which is the innermoſt of all the common Teguments, it is ſaid to take its Origin from the Back; and ſpreading itſelf all over the Body, is knit to their proper Coats by a great number of ſmall Fibres, yet not ſo cloſely as to hinder their Action: It is in a Horſe conſiderably thick, and ſerves to ſtrengthen and confirm all the Muſcles in their proper Situation, and to be a *Capſula*, or Caſe, to defend them from Injuries.

CHAP. II.

Of the lower Belly.

§ I. *Of its proper Inveſtiture and Teguments.*

BY the lower Belly, is to be underſtood all that Cavity which is below the Midriff, and is encompaſſed by the Short-ribs, the Point of the Breaſt-bone, Loins, Hanch-bones, and Share-bones, and is fill'd with Guts, and other Entrails.

The proper Teguments of the lower Belly, are the Muſcles, and the Membrane which lies under them, call'd the *Peritonæum*.

Five Pair of Muſcles belong to the lower Belly.

The Muſcles are of different Shapes and Figures, according to their ſeveral Uſes. Theſe on the lower Belly are divided into five Pair; the uppermoſt are called the *oblique deſcending* Muſcles, and derive their Origin from the Sides of the Breaſt-bone, the Points of ſome of the lowermoſt Ribs, where they reſemble the Teeth of a Saw; from the Tips of the Croſs-proceſſes of the Joinings of the Rack-bone in the Loins, and run ſloping downwards into the white Line, which is only a tendinous Subſtance, form'd by the Endings of ſuch of thoſe Muſcles as meet and are determin'd in it; and reaches from the Point of the Sword-like Griſtle of the Breaſt-bone, as low as the Share-bone, dividing the lower Belly in the middle. Theſe two Muſcles have their Inſertion from below the Navel downwards, to the End of that Line.

The oblique deſcending Pair.

The oblique aſcending Pair.

The next are the *oblique aſcending* Pair; they riſe from the upper Part of the Hanch-bone, and from the Proceſſes of the *Vertebræ* of the Loins and *Os ſacrum*; and taking a contrary Courſe to thoſe above deſcrib'd, they are inſerted partly on the Ends of the Short-ribs, and partly on the white Line, from the Point of the Breaſt-bone down to the Navel. Their Action is different from the former; for as thoſe draw the lower Part of the Belly ſideways, towards the Breaſt, from whence they ariſe, ſo theſe draw down the Cheſt ſomewhat aſlant towards the Loins.

The Streight Pair.

The third Pair are call'd the *Recti*, or ſtreight Muſcles; becauſe their Fibres run in

a ſtreight Line from their Origin, at the Sides of the above-mention'd Griſtle, and the Ends of the Baſtard-ribs to the Share-bone, where they are inſerted. There are in theſe ſeveral tendinous Interſtices, which are the Cauſe why ſome Anatomiſts have divided them into divers Muſcles. They ſhorten the Belly, by drawing the Breaſt and Share-bone towards each other.

The fourth Pair are called the *Pyramidal*, from the Reſemblance they bear to a Pyramid, being broad at Bottom, and growing gradually narrower towards the Top: They ſeem to be derived from the ſtreight Muſcles, and are aſſiſting to them in contracting the Belly. *The Pyramidal Pair.*

The laſt are the *Tranſverſe* or Croſs Muſcles, which have their Origin from the lowermoſt Baſtard ribs on each Side, from the tranſverſe Proceſſes of the Joints, or *Vertebræ* of the Loins and Haunch-bones, from whence, running acroſs the Belly, they are inſerted in the white Line. *The Tranſverſe Pair.*

Beſides that theſe Muſcles are a Cover and Support to the lower Belly; they have not only their particular Offices, but act in concert with each other, and give their mutual Aſſiſtance in compreſſing the Guts, to the Expulſion of their Excrements.

Underneath the Muſcles lies the *Peritonæum*, which is the next proper Tegument of the Guts. It is a double Membrane, of an oval Figure, and is thought to derive its Origin from that which involves the Pith of the Loins; its Inſide is very ſmooth, and lin'd with a ſort of *Mucus*, which proceeds from the Guts, over which it is ſpread. From this Membrane, all the lower Parts of the Belly are furniſhed either with their common, or proper Membranes. It has Ligaments, whereby it helps to bind all the Guts in their proper Situation, that no violent Motion may diſplay them; it alſo affords a ſtronger Ligament to the Liver, and is a great Support to a vaſt Number of ſmall Veſſels, which would either be broke, or twiſted in ſo long a Courſe, were they not preſerv'd within its Duplicature. *The* Peritonæum.

§ II. *Of the Caul.*

The *Caul* ſeems to be a proper Invelopment or Cover to the Guts, being in moſt *The Caul.*

Animals ſpread all over them; tho' in a Horſe it is often ſeen to lie forward in Wrinkles, which may be occaſion'd by his violent Labour. It is in figure like a Purſe-Net, being double, and open at top, but knit together towards the bottom: It adheres to the lower Part of the Stomach, and likewiſe to the Spleen, and hollow Side of the Liver. By its underſide it is faſten'd to that Part of the Gut *Colon*, which lies under the Stomach lengthways, and likewiſe to the Sweetbread, and beginning of the ſmall Guts.

Its Uſe. As the Caul has plenty of Fat, it not only ſerves to keep the bottom of the Stomach, and moſt of the Guts moiſt, but alſo cheriſh them with its Warmth: And beſides this, it has likewiſe a further Uſe, *viz.* to ſuſtain a vaſt number of Branches of Veſſels which paſs between its Membranes to the Stomach, Spleen, and Guts, *&c.*

§. III. *Of the Gullet, Stomach, Guts, and Meſentery.*

The Gullet. Tho' all the *Gullet* be not contain'd in the lower Belly, yet as it is an Appendage to the Stomach, and the Funnel thro' which every thing paſſes into it; a Deſcription of it cannot be ſo proper any where elſe, as in this Place.

It is hollow and round, beginning at the Root of the Tongue, behind the Head of the Windpipe, under which it paſſeth, turning a little to the Right, to give way to the great Artery; afterwards inclining to the Left, it paſſes thro' the Midriff, and is inſerted into the Stomach towards its left Side.

It conſiſts of three Coats, or Caſes; the outermoſt ſeems to come from the *Pleura*, &c. the middlemoſt is muſcular and thick, conſiſting of two Ranks of fleſhy Fibres, aſcending and deſcending obliquely croſs one another: The innermoſt is membranous, with ſtreight Fibres only; its Veins communicate with thoſe on the Breaſt and Neck,

Its Veſſels. as do alſo its Arteries. At its beginning it has two large Glands or Kernels, which ſeparate a Moiſture to keep its inſide glib, to facilitate the Paſſage of the Blood, *&c.* Where it is inſerted into the Stomach, it is compoſed of a pretty thick Subſtance made up of circular and fleſhy Fibres, whereby it contracts and dilates itſelf, to give way to the Aliment, or ſhut up the Stomach at pleaſure. This is call'd the left, or upper

Orifice

Orifice of the Stomach; and that whereby it discharges itself into the *Duodenum*, its right or lower Orifice.

The Stomach.

The *Stomach* is round, and somewhat long, resembling a Bagpipe, but more capacious on the left Side than the right; its Magnitude is, generally speaking, more or less, according to the size of the Horse. It is also composed of three Cases, the outermost of which seems to rise from the *Peritonæum*; the second is muscular and fleshy; and the last a Continuation of the innermost Coat of the Gullet.

Its Vessels.

It has Arteries from the *Cæliacal* Branch of the *Aorta*, and Veins from the *Splenick*, and the *Gastricks*, a Vein common to its left Side and the Caul, and one common to the Caul and the right Side from the *Mesentericks*; and lastly, the *Pyloria*, which comes from the *Porta*.

Its Nerves.

It has Branches from the Recurrent Nerves, which being exceeding numerous, are the Occasions of its being so very susceptible of Hunger, and all other Sensations.

Its Use.

The Use of the Stomach is to concoct and digest the Aliment, so as to render it fit for Nourishment; and this is perform'd chiefly by its muscular Motion, which is manifest from its Structure, and the Power it has of contracting itself into those *Rugæ*, which we discover in it when it is empty.

The Guts.

After the Stomach come the *Guts*, which, according to Mr. *Snape*'s Computation, are in number six, to wit, the small Gut, the *Cæcum* or blind Gut, the three *Colons*, and the streight Gut.

The small Gut.

The *small Gut* (which in a Man is divided into three, to wit, the *Duodenum*, *Jejunum*, and *Ilion*, from its several Circumvolutions) is in a Horse reckon'd to be about 26 Yards in length; and is in all its Turnings fasten'd to the Mesentery. The Stomach empties its Aliment into this Gut, which is furnish'd with an infinite number of milky Vessels, call'd *Lacteals*, that receive the finer Portion of the Aliment, which being convey'd by these little Conduits across the *Mesentery*, to one common Receptacle, ascend upwards along the Spine, thro' a pretty large Chanel, which is call'd the *Thoraick Duct*; and from thence into the Veins, and is incorporated with the Blood. The coarser Part of the Food, by a peristaltick, or vermicular Motion, which is common to all the

the Guts, falls downwards, and is diſcharg'd in Excrement. There are in this Gut, beſides the Veſſels it has in common with the reſt, two Ducts which open into it; the one from the Liver, and the other from the Sweetbread; each of which ſends in a Juice, that contributes to the Refinement of the Aliment, *&c.*

The Cæcum *or blind Gut.*

The next is the *Blind Gut*, which has but one Paſſage for the Excrements, ſo that they are forced to return back the ſame way they went in.

The Three Colons.

The three *Colons* (which in Men are but one continued Gut) are next the Blind Gut; they are divided into three Guts by two narrow Necks of about half a Yard in length. This Gut is drawn up into many Purſes or Cells by two Ligaments, one of which runs along the upper Side, and another along the under Side; which, with the Aſſiſtance of a Valve at its Beginning, hinder the Excrements, either from returning back into the ſmall Guts, or falling too ſoon downwards, before the Chyle or milky Subſtance is ſufficiently prepar'd, and ſent off into its proper Veſſels. The *Cæcum* ſeems alſo to be inſtead of a Valve, to hinder the Aliment or Chyle from falling too ſoon downwards into the *Colon*; for if it was not in ſome meaſure obſtructed, and detained in its Paſſage thro' theſe large Conduits, the Body could never be ſufficiently ſupply'd with Nouriſhment. The firſt of theſe *Colons* is about a Yard and half in length; the ſecond about a Yard; and that which joins to the *Rectum* or ſtreight Gut, near ſix Yards long.

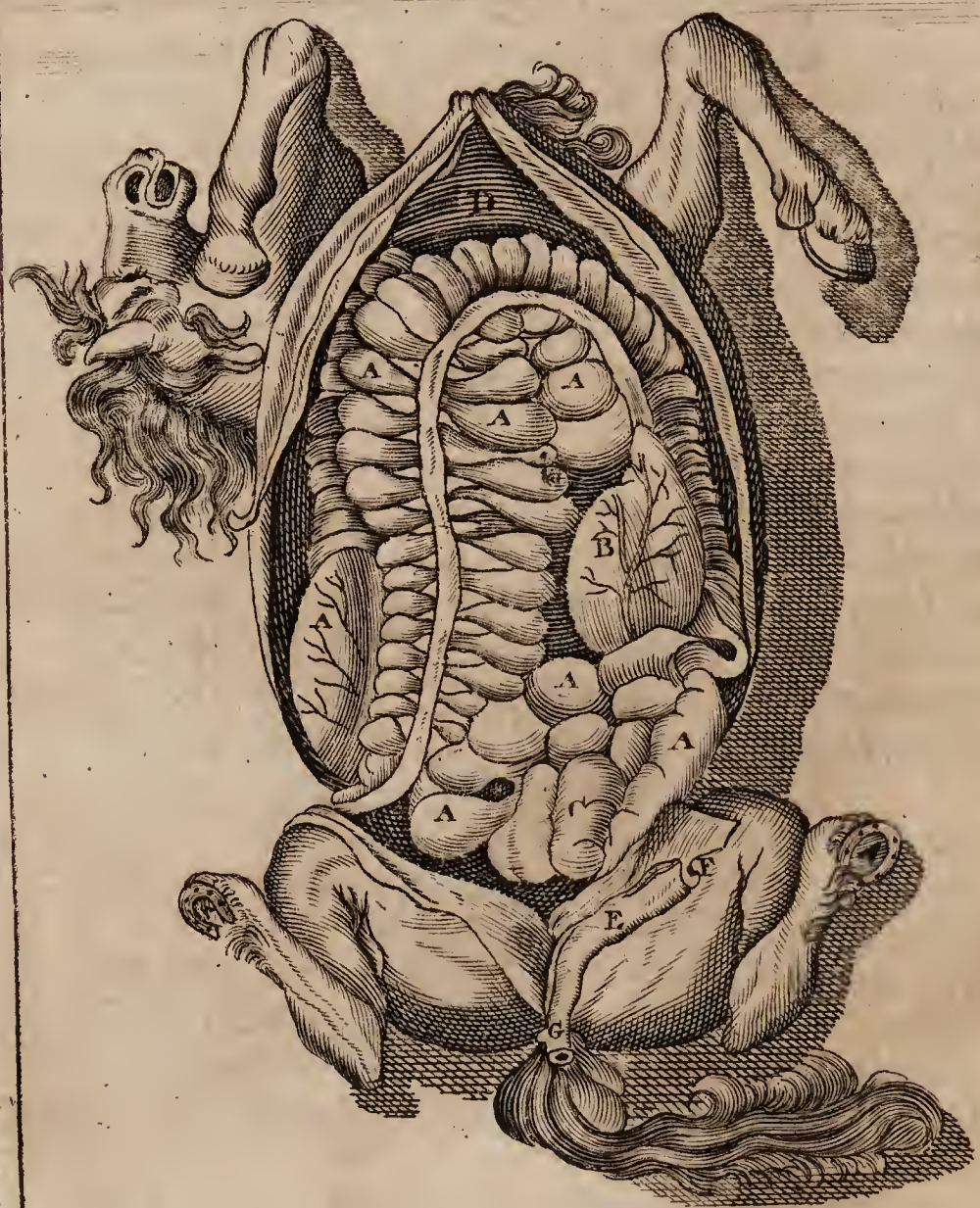
The Streight Gut.

The *Streight Gut*, which goes ſtreight downwards to the Fundament, is not above half a Yard in length; its Coats are thicker than thoſe above deſcrib'd, its middlemoſt being very fleſhy and muſcular: At its Extremity there is a Sphincter, which dilates itſelf for the Evacuation of the Excrements, and keeps it contracted, or ſhut up at all other Times.

There is on the Inſide of the whole Guts a *Mucus*, or ſlimy Matter, which preſerves them from being hurt either by the Hardneſs of the Excrements, or the Pungency of any ſharp corroſive Humours; for they being, as moſt other membranous Subſtances, full of Branches of Nerves, would be in perpetual Pain, had not Nature taken a ſpecial Care of them.

The

TAB. I.



The *Meſentery*, which in the next Place, comes properly to be deſcribed, is ſo called from its Situation in the Middle of the Guts. Its Riſe is from the third Rack-bone of the Loins, and is compoſed of three Membranes, the middlemoſt being very full of Kernels or Glands, which, when they happen to be over-much dilated, obſtruct the Paſſage of the Chyle, which runs acroſs its Membranes; and the Body being thereby depriv'd of its Nouriſhment, becomes lean and emaciate, and at length falls into irrecoverable Diſeaſes. *The Meſentery.*

At its Riſe it is gathered together in a vaſt many Plaits or Folds, which being open on that Part of it to which the Guts adhere, makes them lie in thoſe Circumvolutions and Turnings, in which we always obſerve them: And this ſeems abſolutely neceſſary; becauſe if they were not tied in ſuch a manner, but let looſe, the Excrements would either paſs too quickly through them, or elſe be wholly obſtructed, by reaſon they would be apt to twiſt and entangle one with another.

In a Horſe, the Meſentery is uſually above a quarter of a Yard in Breadth; and beſides, in the milky Veſſels, which are ſuſtain'd by it, it has abundance of Lymphaticks, which ſerve to dilute the Chyle. Its Veins are Branches of the *Porta*; and its Arteries the *Meſeraick* or *Meſenterick*: As to its Uſe, it is ſufficiently demonſtrable from what has been already ſaid concerning it, and the Guts. *Its Veſſels.*

TABLE I. repreſents the Guts, as they appear after the Caul is taken away.

AAAA. *Sheweth the Gut* Colon, *with all its Circumvolutions and Folds, with the ſmall Necks, which divide it into three Parts; as alſo the Space which it takes up in the lower Belly.*

B. *The* Cæcum *or Blind Gut.*

C. *The* Rectum *or Streight Gut.*

D. *Part of the* Diaphragm, *or Midriff.*

E. *The Yard.*

F. *The Glans or Nut.*

G. *The Fundament with its Sphincter.*

§. IV.

§. IV. *Of the Spleen, Pancreas, and Liver, with the* Porus Biliarius, *or Gall-pipe.*

The Spleen. The *Spleen*, or *Milt*, is a ſoft, ſpungy Subſtance of a black livid Complexion, a triangular Shape, but ſomewhat longiſh, ſituated on the left Side, oppoſite to the Liver; it adheres both to the Midriff and Stomach: It is covered with a Membrane from the *Peritonæum*, which, becauſe of its ſoft ſpungy Subſtance, is conſiderably thick. Its Veins are a Branch of the *Porta*: Its Arteries ſpring from the left *Cæliack* Branch, and its Nerves from the left Intercoſtal. It has alſo *Lymphatick* Veſſels, which glide along the Caul to the Receptacle of the Chyle. There is no Part of the Body wherein Anatomiſts have differed more, than concerning the Uſe of the Spleen: To paſs by a great many various Opinions about it, it has been thought to give an Aſperity and Souriſhneſs to the Blood which comes into it; and as that Blood is conveyed from thence to the Liver, it was believ'd to be in order to ingender, or to keep up a moderate Ferment in it; but becauſe ſeveral Animals have liv'd after it has been cut out, and been more brisk than when they had it, it is not therefore improbable, but it has ſome other Uſe not yet known; eſpecially ſince the modern Diſcoveries allow of no ſuch Ferment. It is however certain, that it ſerves to cheriſh and ſupport the left Side of the Stomach, as the Liver does the right, to further Digeſtion.

The Sweetbread. The *Sweetbread* or *Pancreas*, ſo called becauſe it is altogether fleſhy, is ſituated under the back Part of the Stomach, and lies croſs the Belly. It is a white and ſoft glandular Subſtance, ſtored plentifully with ſingle Kernels over its Surface, which are ſomewhat prominent, and of a reddiſh Colour. It has its Cover alſo from the *Peritonæum*. Its Arteries ſpring from the Cæliacal, and its Nerves from the Intercoſtals; its refluent Blood is ſent into the Liver, as that of the Spleen: Beſides, it has a Paſſage into the firſt Gut a little below the Stomach, which is call'd the *Pancreatick Duct*. The Liquor which that Duct diſcharges, is believed, in conjunction with the Gall, to ſweeten the Chyle, to free it from all manner of Impurities. This Liquor ſeems chiefly to be derived from the little Glands which are on its outſide, there being a great many little

Its Veſſels.

Pipes

Pipes detach'd from them, thro' all Parts of it, to the abovementioned Duct. As for the further Uſes of the Sweetbread, I ſhall only take notice, that as it lies acroſs under the lower Part of the Stomach, it not only contributes to its Warmth, but may help to keep it ſomewhat elevated; by which means its muſcular Action is not hindred, as it might probably be when full, if its Weight was not ſupported. *Its Uſe.*

The Antients believ'd the *Liver* to be the chief Inſtrument of Sanguification; neither could they be much blamed for this Opinion, it being agreeable to the firſt Diſcoveries made in Anatomy. *The Liver.*

Its Subſtance is fleſhy, ſomewhat reſembling congealed Blood: It is ſituated on the upper Part of the lower Belly, on the right Side, under the ſhort Ribs. The Liver of a Horſe has four Lobes, which graſp the Stomach, and keep it warm. It is tied by three Ligaments; the chief of which is called its *Suſpenſory*, and is a Production of the *Peritonæum*; it is very ſtrong and nervous, ariſing from the Midriff towards its right Side, and is inſerted in the thickeſt Part thereof, where its uppermoſt Cover, expanding itſelf, forms the proper Tegument of the Liver; another Ligament fixed to the Point of the Breaſt-bone, in conjunction with the firſt, keeps it ſuſpended in ſuch manner, that it can neither fall downwards nor ſideways. The *Umbilical* Vein, by which the *Fœtus* is nouriſh'd, becomes its third Ligament, which is very neceſſary in a Horſe, becauſe it preſerves the Liver, in galloping or leaping, from falling forwards, and bearing too hard upon the Midriff.

Its Veins are the principal Branches of the *Cava*, or hollow Vein, whoſe other Branches receive all the Blood which is brought in by the *Porta*, forming the hollow Vein abovemention'd, by a Combination of all their Roots into one great Trunk. The *Porta* (ſo called from its Office) is form'd from the Branches which have been already obſerv'd to come from the Spleen, Sweetbread, and Guts, *&c.* Its Arteries are from the *Cæliac*, and its Nerves from the Intercoſtals, *&c.* Its lymphatick Veſſels take the ſame Courſe, as thoſe of the Spleen and Pancreas. *Its Veſſels.*

Though a Horſe has no *Gall Bladder*, yet he wants not ſufficient ſtore of *Gall*, which is ſeparated by its proper Veſſels, and convey'd directly into the firſt Gut, about *The* Porus Biliarius *or Gall Bladder.*

ten

ten or twelve Inches below the undermoſt Orifice of the Stomach. This Liquor is ſeparated from the Blood, which is imported to the Liver from the Spleen, *&c.* and ſerves, in conjunction with the *Pancreatick* Juice, for the Purpoſes abovemention'd.

Its Uſe. The Liver is of great Uſe, as it is a conſtant Receptacle for all the Blood which is return'd from the Spleen, Pancreas, and Guts; where it, no doubt, undergoes ſuch Changes and Alterations, by the Separation of the Gall, as are neceſſary, before it goes into the Heart, to fit it for a freſh Progreſs into all Parts of the Body. It is moreover exceeding healthful to the Stomach, as it not only cheriſheth it by its Warmth, but alſo keeps it ſteady, and preſerves it from any counter Action, that might mar its muſcular Motion, and hinder Digeſtion.

§. V. *Of the Kidneys, Ureters, and Bladder.*

The Kidneys. The *Kidneys* are ſeated in the Loins, behind the Stomach and Guts; the Right under the Liver, and the Left under the Spleen. They are ſeldom alike: In a Horſe, that on the right Side is ſomewhat triangular; and the other is much broader below than at top, not unlike the figure of an Egg.

Their Veſſels. They are nouriſh'd by their own proper Veſſels, which are call'd the *Emulgents*; the Artery ſpringing directly from the *Aorta*, and the Vein having as near a Communication with the *Cava*: Their Nerves ſpring from the ſame Branch of the *Intercoſtal* that goes to the Stomach, and that is the Reaſon why the leaſt Diſorder in the Kidneys, Ureters, or Bladder, cauſes ſuch ſudden Sickneſs.

The Subſtance of the Kidneys is chiefly *glandular*, having on the Outſide, a vaſt number of little Kernels, which ſeparate the Stale from the Blood, and from them proceed an equal number of little Pipes, or Conduits, which run from the Circumference towards the Center, like the Spokes of a Wheel: By theſe the Urine is convey'd into other Glands, which are call'd the *Carunculæ papillares*, from the Reſemblance they bear to Teats, which, in a Horſe, are as big as ſmall Field Beans; and when it has undergone a further Change in theſe Glands, it is empty'd into a Cavity call'd the *Pelvis*, or Baſon, which is in the Center of each Kidney. This being a membranous Subſtance, is no other

other than an Expanſion of the *Ureters*, which are two *Canulas*, or Pipes, from which the Urine paſſes from their reſpective Kidneys to the Bladder.

The Ureters.

The *Ureters* keep not a ſtreight Courſe from the Kidneys, but in form of the Letter *ſ*, they enter into the Back and lower Part of the Bladder, where paſſing about an Inch between its Membranes, to prevent the return of the Urine back the ſame way, they are inſerted near its Sphincter, or Neck.

The Bladder.

The *Bladder* is ſeated in the lower Part of the Belly, within that Circumference which is made by the Loins, Hip-bones, and Share-bone. It is of an irregular Shape, ſomewhat reſembling a Pear, compoſed, as the Stomach and Guts, of a treble Coat or Skin, the outermoſt from the *Peritonæum*, the middlemoſt muſcular, the innermoſt very thin, and of an exquiſite Senſe; having Nerves both from the *Intercoſtals*, and the *Vertebræ* of the Loins. Its Veins and Arteries are Branches of the *Hypogaſtricks*. The Bladder is perforated, or bored, not only where the *Ureters* enter into it, but alſo in its Neck, to give paſſage to the Urine which runs along the *Urethra* or Piſs-pipe, in order to its Diſcharge out of the Body: Its Neck is compos'd of muſcular and fleſhy Fibres, which form a Sphincter Muſcle, ſuch as has been deſcrib'd belonging to the Fundament, which opens and ſhuts at pleaſure.

The Capſulæ Atrabiliares, *or Deputy-kidneys.*

As for the *Capſulæ Atrabiliares*, which ſome Perſons have called Deputy-kidneys, becauſe they are ſituated near the true Kidneys, and ſomewhat reſemble them, I ſhall not ſpend the Reader's Time about them, ſince Anatomiſts have not as yet clearly determin'd their Uſe.

§. VI. *Of the Parts of Generation in a Horſe and Mare.*

The Yard.

The *Yard* being the moſt external of all the Parts adminiſtring to Generation, I ſhall therefore begin with it. Its outward Cover, or Sheath, is nothing elſe but a Production of the Scarfskin, Hide, and fleſhly Pannicle; which are tied by an Appendage, call'd the *Frænum*, or Bridle, which runs along the underſide, in a narrow Slip, almoſt to the Root of the Yard; ſo that the Sheath folds back in ſeveral Wrinkles, and gives full Liberty to the Yard, as often as it is extended and drawn.

The

Its Subſtance. The internal Subſtance of the Yard conſiſts of two nervous Bodies, which, as in Man, make up the greateſt Part of its Bulk. Theſe two Bodies are very ſpungy and open in a Horſe, and when dried, are extremely light; but in a Bullock, and ſome other Animals, they are more compact and ſolid. They are compoſed of a vaſt many Branches of Veins, Arteries, and Nerves, which are variouſly interwoven one with another. On the underſide, between theſe two cavernous Bodies, runs the *Urethra*, or Piſs-pipe, from the Sphincter of the Bladder, to the Extremity of the Glans or Nut, which affords a Paſſage both for the Urine and Seed.

The Glans is an Appendage to the Yard; it is of a round Figure, but very thin, in proportion to what it is in Man; it is not ſo cavenous as the Yard, but of a quicker Senſe, being the chief Seat of Pleaſure in Copulation.

Its Muſcles. The Yard has two Muſcles on each Side towards its Root: The firſt Pair ſpring from the external Proofs or Knob of the Hip-bone, and help the Yard in Erection; the other two riſe from the Fundament, and are called the *Dilaters*, becauſe they ſerve to open and widen it for the freer Paſſage of the Seed and Urine. Its Veins and Arteries ſpring from the *Hypogaſtricks*, and its Nerves from the lower *Vertebral*.

Its Veſſels.

The Stones. Next to the Yard, the *Teſtes*, or Stones, properly take place, becauſe in them the Sead is prepared: They are two glandular Bodies of an oval figure, ſituated under the Root of the Yard, hanging in a *Scrotum*, or Bag; which is no other than a Production or Continuation of the Sheath above deſcribed. The Stones have each a Branch from the *Aorta*, or great Artery, which brings the Blood directly from thence, not only for their Nouriſhment, but for Seed.

Their Veſſels. Their Veins are Branches of the *Cava*, ſome of which open into the great Trunk thereof, very near the Emulgents, but not in the Emulgents, as in Men. Theſe are called the *Præparatoria*, or preparing Veſſels, from which the upperſide of the Stones are curiouſly claſped and twined, like the Tendrils of Vines; and growing narrower, and uniting more together as they advance towards the Belly, they are denominated by ſeveral Names, as the Pyramidal Body, and *Plexus Pampiniformis*, &c. On the backſide of each Stone there is a longiſh Body

dy ſomewhat white and round, called the *Paraſtatæ* or *Epididimæ*; from each of theſe runs a pretty large Veſſel, which empties itſelf into the Seed-bladder, ſituated on each ſide the Root of the Yard, and on the inſide of the Share; theſe are called the *Deferentia*, or the Veſſels which carry back the Seed: Both the *Deferentia* and the Blood-veſſels, above deſcribed, are incloſed in a *Capſula* or Sheath, which is a Production of the *Peritonæum*, proceeding from the lower Belly on each ſide, which not only ſerves for this uſe, but forms the outermoſt Cover of the Stones, and is that which Anatomiſts call the *Tunica Vaginalis*.

Their Muſcles. Each Stone has a *Cremaſter* or ſuſpenſory Muſcle, to draw them up in time of Copulation, which ariſing from the Ligament of the Share-bone, expands itſelf all round the inſide of the *Tunica Vaginalis*; and, according to Mr. *Snape*, forms their ſecond Coat. Beſides theſe, the Stones have an innermoſt Coat or Cover, which is thick and nervous, and not only contributes to their Warmth, but is a great Defence to their true Subſtance, which conſiſts of a very fine Clue of Veſſels, made up of Veins, Arteries, and Nerves, and form'd out of thoſe above deſcrib'd; ſo that the Liquor paſſing thro' ſo many Circumvolutions and Turnings, in Veſſels which are infinitely ſmall, it is thereby ſo often ſtrained and refined, till it becomes fit to enter into the *Paraſtatæ*; where probably undergoing ſome further degrees of Refinement, it is compleatly form'd into Seed.

The Proſtrates. There are ſeveral glandular Bodies ſituated at the Root of the Yard, immediately before the Seed-bladders, and are therefore called *Proſtrates*. Theſe ſeparate a clear ſlimy Matter, which being forced out in time of Copulation, no doubt preſerves the Urinary Paſſage from the Pungency of the more ſpirituous Parts of the Seed; and may at other times, in conjunction with the *Mucus* which is in that Paſſage, defend it from the Heat and Sharpneſs of Urine, Sand, or other gritty Matter ſent into it from the Bladder.

Having given this ſhort Account of the Genitals of a Horſe, we come in the next Place to thoſe of a Mare, which differ from the other, not only as they are all contained within the Cavity of the Belly, but likewiſe as to their Figure and Uſe.

The Parts of a Mare. A Mare has two *Teſtes* or Stones, as well as the Horſe, which lie backwards on each

Side under the Loins; and theſe are nouriſhed with Arteries which ſpring from the *Aorta*, and are more in number than thoſe of a Horſe. The abovementioned Author mentions but one Vein from the *Cava*; which is contrary to his own Figure of a Mare's Genitals, where there are ſeveral; but this he ſeems to have borrowed from the Anatomy of a Woman, having probably never examin'd thoſe Parts of a Mare with that Induſtry the Author has done, from whom he has taken this Figure.

The Ovaria.

Wherein they differ from the Stones of a Horſe.

The Stones of a Mare are not as thoſe of the Horſe, oval and round, but flat like a Garden-bean: They have their common and proper Teguments, and in their inner Subſtance ſeveral *Ovaria* or Egg-beds, which are Receptacles for the Male-Seed.

The Womb.

Somewhat forward, and below theſe *Ovaria*, is ſeated the Womb or *Matrix*, between the Neck of the Bladder and the ſtreight Gut, where it is firmly tied in its Place by two Pair of Ligaments; it is differently ſhaped from that of a Woman, being divided by its *Cornua* or Horns, whoſe hollow round Inſertion ſeems to compoſe its *Fundus* or Bottom. Out of theſe Horns ariſe the *Tubæ* or Trumpets, ſo called by *Fallopius*. At their Exit they are very ſmall, but in their Progreſs grow wider and ſomewhat contorted. Towards their Extremity they are again contracted into a ſmall Orifice or Mouth, with a jagged Membrane all round their Circumference, not unlike the Huſk of a Roſe. The Uſe of theſe Tubes, is to convey the Seed from the Womb to the *Ovaria*, where the Impregnation firſt begins; and alſo to afford it a Paſſage back again to the ſame Place.

Its Hornes and Tubes.

Its Subſtance.

The Subſtance of the Womb is fleſhy, incloſed within two Membranes, which are nervous and ſenſible: It has a great number of Blood-veſſels from the *Hypogaſtricks*, which, after Conception, inlarge it like a Sponge, and fill it with Blood, not only that it may become a proper Bed for the *Fœtus* to lie in, but alſo to ſupply it with ſufficient Nouriſhment.

The Sheath.

The *Vagina* or Sheath, is an Appendage to the Womb, being only a Production of its Membranes; it is that which forms the long Paſſage reaching from the *Pudenda* or Privities. On its inſide are ſeveral

Rugæ

Rugæ and Caruncles; the Uſe of which are to ſtimulate the Horſe to a vigorous Diſcharge of his Seed. Beſides theſe, there are the *Nymphæ* juſt within the *Labia*, and the *Clitoris* more backward, which not only ſerve to the ſame Purpoſe, but to augment the Pleaſures of the Mare; the *Clitoris* being a ſpongy Body, anſwering to the Glands or Extremity of the Horſe's Yard, and endued with the ſame Senſation. The inſide of that Paſſage has a thin *Mucus* from its Glands, which is not only a Defence to it, but likewiſe ſerves to facilitate the Paſſage of the Horſe's Yard; which being an extreme ſenſible Part, would otherwiſe be hurt by its unevenneſs. About an Inch within the Lips, on the upperſide, there is a ſmall Paſſage by which the Urine is diſcharged from the Bladder into the Extremity of the Sheath: And as the Bladder has its Sphincter to ſhut up its Neck when the Urine is drained from it, ſo the *Nymphæ* do the ſame Office in the *Vagina*: And when they are contracted, or rather cloſed together, from the *Fiſſure*, or Chink, they are alſo of further uſe to prevent Flies, Dirt, or any extraneous Matter from getting within it.

The Udder.

The *Udder* is another Part peculiar to the Mare, being that from whence the Foal receives its firſt Nouriſhment after its Birth. Its Subſtance is partly fat, and partly glandular: By its Glands the Milk is ſeparated from the Blood, which is brought into it by the *Hypogaſtrick* Arteries, and carried along in little Pipes to two Glands, which are pretty large, ſeated at the Root of each Pap, where undergoing its laſt Refinement, it is diſcharged firſt into its proper Veſicles, and then into the Paps which convey it to the Foal.

Tho' the Udder of a Mare ſeems to be one undivided Subſtance, yet, as in all other Animals, it is truly ſeparated; the Veſſels of one Pap having no immediate Communication with the Veſſels of the other. So that if a Mare ſhould have one Side of her Udder hurt, the Foal may ſtill be nouriſhed by the other.

It may, perhaps, be expected that I ſhould put an End to this Chapter, by giving ſome Account of Conception, and the Manner of the Foal's being nouriſhed in the Womb; and likewiſe that I ſhould take ſome notice of the Male-Seed, which by moſt modern Anatomiſts is believed to be full of *Animalcula*, or little moving Creatures, which, they ſay, by the help of a Microſcope, may be plainly diſcerned in that Liquor. But as theſe Things would not only be too te-

dious, but of more Curiosity than Use to the Farrier, for whose Service this is principally intended: And as Anatomists differ among themselves in many Circumstances concerning them; and moreover as it would, besides a bare Knowledge of the Structure of the Parts, require in the Reader a competent Skill in Natural Knowledge, to understand those Disputes fully: I shall not therefore detain him about them, but proceed to a Description of the middle Venter or Chest, being that which properly comes next under Consideration.

TABLE II. Represents the Stomach, and several other Parts contained in the lower Belly.

Fig. 1. Sheweth the Stomach taken out of the Body.

A. *The Gullet.*
B. *The upper Orifice of the Stomach.*
CC. *Two Nerves dispersed through the upper Part of the Stomach.*
D. *The* Pylorus, *or lower Orifice of the Stomach.*
E. *Its Entrance into the small Gut.*
F. *The Entrance of the* Porus Biliarius, *or Gall-passage, into the beginning of the small Gut.*
G. *The Entrance of the* Pancreatick *Duct into the same Gut.*
H. *Part of the first Gut.*
I. *The outside of the Stomach, with the Ramifications or Branches of the Blood-vessels upon it.*
KK. *The outermost Coat of the Stomach turn'd back.*
L. *Its middle Coat, with the Ramifications of the Nerves upon it.*
MMM. *The* Gastrick *Vessels inserted into the bottom of the Stomach.*

Fig. 2. Sheweth the Stomach turned inside out.

A. *The left Orifice, or Mouth of the Stomach.*
B. *The right, or lower Orifice.*
C. *The Wrinkles and Folds of its muscular Coat.*

Fig. 3. Shews the hollow Side of the Liver.

AAAA. *Its four Lobes.*
BB. *The* Vena Porta, *with its Egress out of the hollow Side of the Liver, together with a Nerve of the sixth Pair creeping over it.*
C. *The Trunk of the* Vena Cava, *or hollow Vein.*

D. *The*

TAB. II.

Fig. 2.

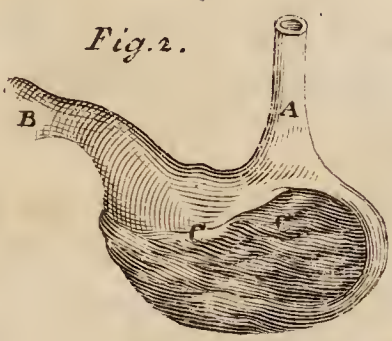


Fig. 1.

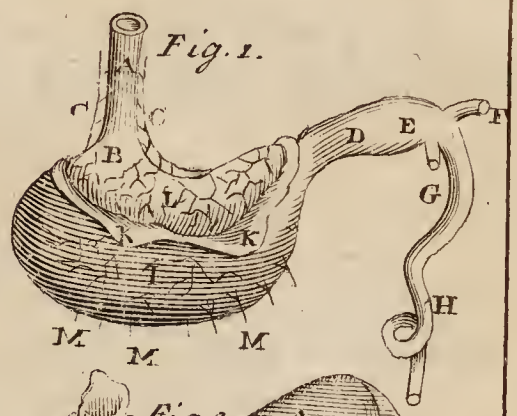


Fig. 4.

Fig. 3.

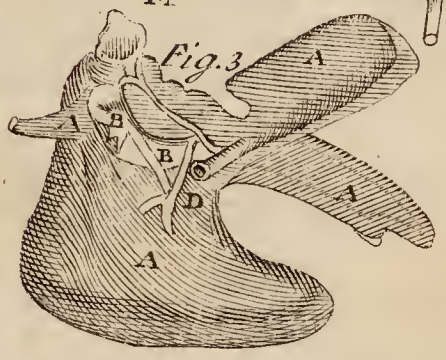


Fig. 5.

Fig. 6.

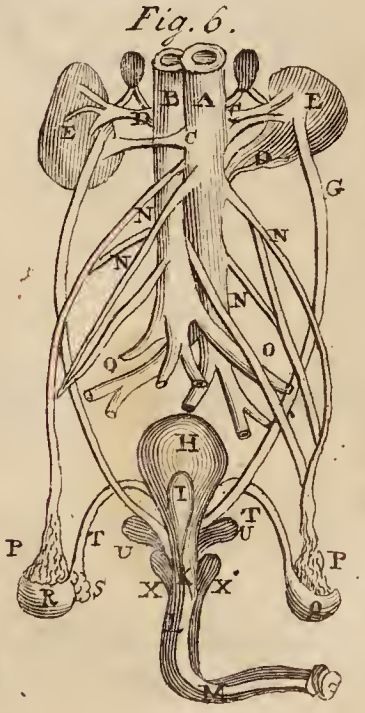


Fig. 7.

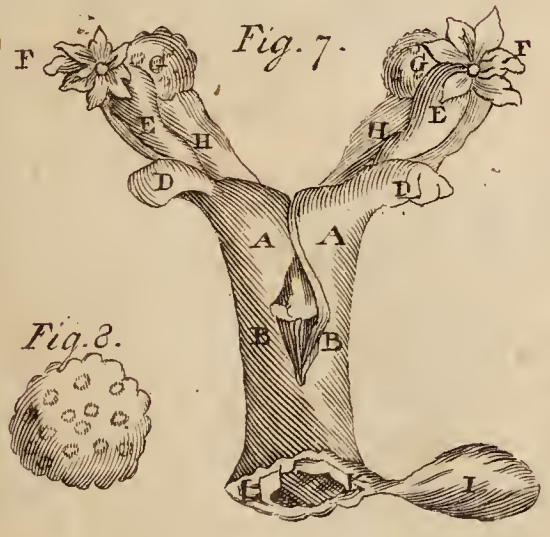


Fig. 8.

D. *The* Porus Biliarius *or Gall-paſſage.*
E. *A Branch of the* Cæliac *Artery.*

Fig. 4. Repreſents the Spleen, with its Veſſels.

A. *The concave, or hollow Side of the Spleen.*
B. *The Splenick Vein.*
CCC. *The Splenick Artery.*

Fig. 5. Shews the *Pancreas*, or Sweatbread, freed from its Membrane and part of its Subſtance, the better to ſhew the Courſe of its Veſſels.

AAA. *The Body of the* Pancreas *diſſected.*
BB. *The* Pancreatick *Duct.*
C. *The Orifice of the ſaid Paſſage into the firſt Gut.*
D. *An Artery which is diſperſed through its Subſtance.*
E. *A Vein which accompanies the ſaid Artery.*
F. *A Branch of the Intercoſtal Nerves.*

Fig. 6. Shews the Kidneys, Ureters, and Bladders, with the Parts of Generation in a Horſe.

A. *The deſcending Trunk of the hollow Vein.*
B. *The deſcending Trunk of the great Artery.*
CC. *The Emulgent Veins ariſing out of the hollow Vein.*
DD. *The Emulgent Arteries ſpringing from the great Artery.*
EE. *The Kidneys.*
FF. *The Deputy-Kidneys.*
GG. *The Ureters.*
H. *The Bladder.*
I. *Its inſide.*
K. *Its Neck, where it opens into the* Urethra *or Piſs-pipe.*
L. *The cavernous Body of the Yard.*
M. *The* Urethra *or Piſs-pipe.*
NNNN. *The Seed-preparing Veins commonly ſo called.*
OO. *The preparing Arteries.*
PP. *The Pyramidal Bodies, or* Corpora Varicoſa.
Q. *The right* Teſticle, *with its innermoſt Coat.*
R. *The left diveſted of its Coats.*
S. *The* Epididimis *of the left* Teſticle.
TT. *The Deferent Veſſels.*
UU. *The Seed-bladders.*
XX. *The* Proſtrates.

Fig. 7. Shews the Womb of a Mare, with its Horns and Tubes, *&c.*

AA. *The Bottom of the Womb.*
BB. *The* Vagina *or Sheath.*
C. *The Sheath cut open to ſhew the* Clitoris.
DD. *The* Cornua *or Horns of the Womb.*
EE. *The* Tubæ *or Trumpets.*
FF. *Their* Fimbria *or jagged Orifices.*
GG. *The* Ovaria *or Stones of a Mare.*
HH. *The broad Ligaments.*
I. *The Bladder.*
K. *Its Inſertion into the Sheath near its Orifice.*
L. *The outward Orifice of the Sheath.*

Fig. 8. Repreſents one of the *Ovaria* or Teſticles taken off, and cut thro' the middle, to ſhew the Eggs more plain.

CHAP. III.

Of the middle Venter, or Cheſt.

§. I. *Of its proper containing Parts.*

The Cheſt. BY the *Cheſt*, is to be underſtood all that Cavity which is circumſcribed above by the *Collar-bones*, and below by the *Midriff*; before by the *Breaſt-bone*, behind and on both ſides by the *Back-bone* and *Ribs.*

Its containing Parts. Its containing Parts are the Muſcles, the Bones, the *Pleura* and *Mediaſtinum.*

The firſt Thing that appears after the common Teguments are remov'd, being the Muſcles, I ſhall therefore begin with them, and at the ſame time only take notice of the Intercoſtals, leaving the reſt to another Opportunity.

The Intercoſtal Muſcles. The *Intercoſtals* compoſe all the Fleſh that we obſerve to fill up the Spaces between the Ribs: They are in Number, ſixty-four, to wit, thirty-two on each ſide; and are diſtinguiſh'd by the *External* and *Internal*, or the Uppermoſt and Lowermoſt.

The

The External take their Riſe from the lower Part of the upper Ribs, and end in the upper Part of the lower; and the Internal, from the upper Part of the lower Ribs, ending in the lower Part of the upper: By which means they not only differ in their Origins and Inſertions, but alſo in the Courſe of their Fibres, which run directly acroſs one another in the form of the Letter X; ſo that their Action is alſo contrary: The External extending the Cheſt, by raiſing the Ribs, and drawing them backwards, help to make room for the Air in Inſpiration, or taking in the Breath; whereas the Internal contract the Breaſt, by drawing the Ribs downwards towards the Breaſt-bone, for Expiration or Expulſion of the Air.

The Pleura.

Next the Muſcles, on the inſide of the Ribs, we obſerve the *Pleura*. It is a double Membrane, which ſprings from the inſide of the Spine; and is believ'd by ſome to take its Origin from the Coats of the Nerves. It is perforated in ſeveral Places for the Ingreſs and Regreſs of the Veſſels, which go from the Heart to the Head, and the Veins which return from thence; as alſo for ſuch as go downwards to the lower Belly and Extremities, and thoſe which return from thence to the Heart.

Its Veſſels.

Its Veins are from the *Vena ſine pari*, and upper *Intercoſtals*; its Arteries from the upper *Intercoſtal*, and its Nerves from between the *Vertebræ* of the Back.

Its Uſe.

As the *Peritonæum* furniſhes proper Teguments for all the *Viſcera* in the lower Belly, ſo this performs the ſame Office to all the Parts contain'd in the Cheſt, which it involves on all ſides. It is likewiſe a Defence to the *Intercoſtal* Veſſels, which runs between its Membranes, preſerving them from being greated and hurt by the Ribs.

The Diaphragma *or Midriff.*

The *Diaphragma* or Midriff, which divides the Cheſt from the lower Belly, comes next in Order. It is a thin Subſtance, but muſcular and fleſhy, ariſing, according to ſome, from its Circumference; and according to others, from the fleſhy Productions, which ſpring from the *Vertebræ* of the Loins. Its Middle is nervous, and its two Sides fleſhy. The Direction of its Fibres are from its Back and innermoſt Part of nervous Body, branching out on each ſide to its Circumference towards the Ribs. It has ſeveral Perforations, or Paſſages for the Nerves and large Blood-

veſſels, which retain to and from the lower Belly; as alſo a large one for the Gullet.

Its Veſſels. It has Veins from the Trunk of the *Cava*, with ſome Twigs from the *Vena Adipoſa*. Its Arteries are from the *Aorta*: Its proper Nerves are two, proceeding from the Spinal Marrow at the third or fourth Joinings of the Rack-bones of the Neck, being in their Courſe ſuſtain'd by the *Mediaſtinum*. Theſe Nerves enter in at its Center, and diſperſe themſelves thro' its whole Subſtance.

Its Uſe. Its chief Uſe is in Reſpiration, and is the principal Muſcle that aſſiſts in that Action, dilating and contracting itſelf as the Ribs are dilated and contracted. It is alſo uſeful in aſſiſting the *Periſtaltick* Motion of the Guts, whereby the Chyle is forwarded into its Veſſels, and the Excrements to a Diſcharge. It is moreover uſeful to divide the lower Belly from the Cheſt, as has been obſerved.

The Mediaſtinum. As the *Diaphragm* divides the lower Belly from the Cheſt, ſo the *Mediaſtinum* divides the Cheſt in the Middle. It is a double Membrane ariſing from the *Pleura* or Rib-coat, where, beginning at the Breaſt-bone, it holds a direct Courſe towards the Back. Near the Back and the Breaſt this Membrane is united for a little Way; but in the Middle it is ſeparated ſo wide, as to contain the Heart and its *Pericardium*, or Bag: It is like the *Pleura* from whence it proceeds, very ſmooth on its Outſide towards the Lungs, but ſomewhat rough towards the Heart, by reaſon the *Pericardium* adheres to it by ſeveral ſmall membranous Filaments.

Its Veſſels. It has Veins from the *Phrenica*, or *Midriff-vein*, and from the *Vena ſine pari*; it has alſo one from the *Subclavian*, which is proper to it, call'd the *Mediaſtina*. Its Arteries ſpring from the *Phrenica*, and its Nerves are detach'd from that Pair, which deſcend by it to the *Midriff*.

Its Uſe. Beſides its Uſe in dividing the Breaſt, it preſerves the Heart from being hurt in its Motion by the bony Sides of the Cheſt. It is further uſeful to ſuſtain the Veſſels which take their Courſe thro' it; and by its being knit to the Midriff, preſerves that Muſcle from being drawn too much downwards by the Weight of the Liver, whoſe ſuſpenſory Ligament is fixed to it.

§ II.

§ II. *Of the* Heart *and* Pericardium, *&c.*

The *Pericardium* is that Bag in which the Heart is incloſed, as in a Purſe. It riſes from the Baſis, or upper Part of the Heart, from the outer Coats of the great Veſſels, which ſpring originally from the *Pleura*. It is of a middle Subſtance, neither very hard, ſo as to hurt the Lungs, nor yet ſo ſoft as to be itſelf eaſily injur'd by the Motion of the Heart. It is perforated in five Places, namely, on the right Side, for the aſcending Trunk of the *Cava*, which coming from the Liver, enters the right *Ventricle*, and by the *Subclavian* Vein, which deſcends by the Channel-bones into the ſame Ventricle; and thirdly, by the *Pulmonary* Artery, which goes out of the right Ventricle into the Lungs: On its left Side it is perforated for a Paſſage to the *Pulmonary* Vein, which comes from the Lungs, and enters the left Ventricle: And, laſtly, for the great Artery that paſſes out of the ſaid Ventricle. *The* Pericardium, *or Purſe of the Heart.*

Its Veins are from the *Phrenick* and *Auxiliaries*; its Arteries are ſo ſmall, that they are not very diſcernable; its Nerves come from the *Parvagum*. *Its Veſſels.*

The Uſe of this Purſe or Bag, is to cover the Heart, and be a Defence to it, to contain a Moiſture not only to keep it glib and eaſy in its Motion, but alſo cool. There are various Opinions concerning this Liquor of the *Pericardium*, and from whence it is derived; but I ſhall not give the Reader any Trouble by reciting them, but haſten to the Heart itſelf. *Its Uſe.*

The *Heart* is the principal Fountain which ſends Blood and Nouriſhment into all Parts of the Body, and is wonderfully ſuited in every Reſpect for that Purpoſe. *The Heart.*

It is ſituated in the Midſt of the Cheſt, where it is encompaſſed by the Lobes of the Lungs, having its Point inclining to the left Side. It is in Shape not very different from what it is in moſt other Animals, only in a Horſe it does not grow gradually narrow towards its Point, as in ſome, nor ſo broad in Proportion at its Baſis or Root.

Its Subſtance is fleſhy and very ſolid, that it may the better endure the Perpetuity of Motion, and expel the Blood with more Force to all Parts of the Body. It is for that Purpoſe compoſed of muſcular and fleſhy *Its Subſtance.*

fleshy Fibres, which, towards the Top, take their Direction spirally, like the Contortion of a Snail's Shell.

It is said to have a twofold Motion, which by Anatomists is call'd *Systole* and *Diastole*; or, in other Words, its Contraction, when its Top is drawn towards its Basis or Bottom, for the Expulsion of the Blood into the Arteries; and its Dilation, when it is fill'd with Blood from the Veins. As often as we feel the Pulse beat, so often is the Heart contracted; it being the Contraction or *Systole* of the Heart, which communicates that Vibration or Pulsation to all the Arteries.

The Heart, besides its *Pericardium* above-describ'd, hath two Membranes, one that covers all its outside, which it derives from the outer Coat of the great Artery, and another which lines it through all its inside, which proceeds from the inner Coat of the said Vessel. It is stored with Fat towards its bottom, which keeps it moist and glib, as the Water in the *Pericardium* does the rest of its Substance.

Its Vessels. Besides the large Vessels which empty themselves into it, and those which are constantly fed by it, it has a Vein and two Arteries, which are proper to it, and by which its Substance is chiefly nourish'd. These being wove all round like a Garland, are therefore call'd *Coronariæ*. It has also many small Branches of Nerves, which spring from the eighth Pair, and send forth other small Branches to the *Pericardium*.

Its Ventricles. Within the Heart there are two *Ventricles* or Caverns, divided into a right and left, by a fleshy Partition. The right of these *Ventricles* is much the widest, but not quite so long as the left, neither is it of so compact a Substance, or of so great Strength, the *Septum*, or Wall, being peculiar to the left. The Reason of this difference seems to be, because the right *Ventricle* sends the Blood only into the Lungs by the Pulmonary Artery, whereas the left detaches it into all Parts of the Body. The inside of these *Ventricles* is very curiously made up, and interlin'd with several fleshy Pillars, somewhat resembling the small *Gothick* Columns. The Use of which seems to be chiefly for the better Communication of the Blood and Chyle, being, in every Contraction, wrung thro' them as thro' a Sieve.

The Valves *of the large Vessels.* The large Vessels, which we have already observ'd to retain to the Heart, and likewise those by which it is constantly emptied, have each

each of them Valves, for the better Performance of their ſeveral Functions; to wit, the *Vena Cava*, which enters into the right *Ventricle*, has three, call'd *Trienſpides*, from their triangular Figure. They are plac'd at the bottom of the Heart, where the ſaid Vein enters, and pointing inwards, a free admittance is given to the Blood, which goes into the Heart, but none of it can return back again the ſame way. The *Vena Arterioſa*, or Pulmonary Artery, which carries the Blood from the ſame Ventricle to the Lungs, has alſo three Valves, call'd *Sigmoideæ*, from the reſemblance they bear to the old *Greek* Sigma, theſe look from within outwards, by which means they hinder the Blood from returning back again into the Heart.

To the *Arteria Venoſa*, or Pulmonary Vein, which returns the Blood from the Lungs into the left Ventricle, belongs two Valves, called *Mitrales*, from the reſemblance they bear to a Miter. Theſe have the ſame Office as thoſe of the *Cava* above deſcribed: And the three Valves of the *Aorta*, or great Artery, called *Semilunares*, from their being faſhion'd like ſo many Half-moons, have the ſame Office as thoſe of the *Arteria Pulmonaris*.

But laſtly, there belong alſo to the Heart two *Auricles*, or Earlets, from the reſemblance they bear to Ears, being ſeated like two Purſes on each ſide of its Baſis. Theſe Earlets have their *Diaſtole* and *Syſtole*, like unto the Heart, only with this difference, that when the Heart is contracted, the Earlets are dilated; and when the Heart is dilated, the Earlets are contracted; the Reaſon is, becauſe they receive the Blood from the *Cava* and Pulmonary Veins, ſo that as they empty themſelves into the Heart, it forthwith becomes dilated; and when the Heart is contracted, they muſt of conſequence be filled, the Courſe of the venal Blood being, at that Interval, intercepted. *Its Auricles.*

The Uſe of the *Auricles* is to meaſure out the Blood in certain Proportions, before it enters the Heart, leſt, ruſhing in with too great an Impetuoſity, it might not only cauſe the Valves to be violated, but occaſion a Suffocation in the Heart itſelf, whereby the vital Faculty might be quite deſtroy'd. *Their Uſe.*

§. III. *Of the Windpipe and Lungs.*

The *Lungs* are the chief Inſtruments of breathing, they fill up the greateſt Part of the *The Lungs.*

Cavity

Cavity of the Cheſt, being divided into two Lobes, one of which lies on the right Side of the *Mediaſtinum*, and the other on the left.

They are compoſed of the various Ramifications, or Branchings of the Veins, Arteries, and Nerves, together with the Windpide, the Extremities of whoſe Branches are very finely wove together, ſo as to form an infinite number of little *Veſicles*, or *Air-bladders*, reſembling ſmall Grapes when they are extended, but not very perceivable at any other time. When an Animal ſucks in the Air, theſe little *Veſiculæ* or Bladders, are then dilated and full; and when the Air is emitted, as in Expiration, they become empty.

The Windpipe. The *Windpipe*, whoſe Branches make up a great part of the Subſtance of the Lungs, is that great Chanel, which beginning at the Root of the Tongue, deſcends down the Throat, and, as ſoon as it reaches the Lungs, divides itſelf into two large Branches, one to each Lobe. Theſe ſend off a great many Branches, which detach an infinite number of other Branches that reach into all Parts, and whoſe Extremities open into the *Veſiculæ*, or Bladders above deſcribed. This Pipe is called the *Trachea*, or *Aſperia Arteria*, from its roughneſs, which Name it obtains from the Throtle to the Lungs; but thoſe Branches which it ſends off into each Lobe, are term'd its *Bronchia*.

It is compos'd of a double Membrane, which incloſes its *Circular Rings*, the innermoſt of which being muſcular, made up of ſtreight and oblique Fibres, it thereby contracts and dilates itſelf in the Action of Breathing. Thoſe Rings do not quite encompaſs the *Trachea*, or *Aſpera Arteria*, but leave a fourth Part of the Circle wanting, leſt they ſhould hurt the Gullet whereon it lies, and occaſion Pain in ſwallowing; but after it divides itſelf into its *Bronchia*, they go quite round every Branch of it, ſo far as is perceivable to the naked Eye; and doubtleſs, hold the ſame form where its Branches are the moſt minute and ſmall. Theſe Rings, being in a great meaſure, cartilaginous, indue the whole Windpipe, and all its Branches, with a ſort of Elaſticity or Spring, whereby it acts in concert with its membranous and muſcular Parts.

The Blood-veſſels. The Blood-veſſels, which alſo compoſe a great part of the Bulk of the Lungs, are partly a Branch from the great Artery, but principally

pally the Pulmonary Artery and Vein: Theſe Veins and Arteries have frequent Inoſculations, or Communications one with another, by which means they become curiouſly interwoven towards thoſe *Veſiculæ*, or Air-bladders above-mention'd, which kind of Structure is, by moſt Anatomiſts, believ'd to be, to the end that every minute Particle of the Blood in thoſe Parts may be impregnated with Air.

There are, beſides theſe, abundance of Lymphaticks, which attend on the Veins and Arteries thro' the whole Surface of the Lungs, to receive the ſuperfluous Moiſture ſeparated by the Glands, which they afterwards diſcharge into the *Thoraick Duct*. The Lungs have alſo Nerves, which ſpring from the recurrent Branches of the wandring Pair. Theſe accompany the Blood-veſſels thro' their whole Subſtance, and are divided into innumerable Branches.

Their Uſe.

As to the Uſe of the Lungs, it is evident from what has been already ſaid, that they are the chief Organs of Reſpiration, being in every reſpect ſuited to receive the Air, which is the proper Element for all Quadrupeds, as well as Man, to breathe in: And as the Windpipe, with all its Branches, is made up of cartilaginous Rings, which act in concert with its muſcular Coat; it thereby becomes endu'd with a ſort of *Elaſticity* or Spring, by which it is extended as often as the Air is drawn in, and in Expiration becomes again contracted. This ſort of Mechaniſm is plainly viſible in the Windpipe of any Animal, which being drawn out to its full Length, immediately gathers itſelf up as ſoon as the Force whereby it was ſtretched is remov'd. The Elevation and Depreſſion of the Cheſt is in like manner occaſion'd by the Extention and Contraction of the Lungs; and as its Action is thus ſubſervient to them in Reſpiration, it ſeems alſo to be chiefly derived from them; ſo that the Air may be properly term'd the principal, tho' not the immediate Cauſe of that Action alſo.

Now as we are ſure the Air is the immediate and principal Cauſe of that Reſpiration, it would be to little purpoſe to ſpend Time about the various Opinions concerning that Motion of the Lungs, to wit, whether it be Natural or Animal, as the Philoſophers term it; or whether, according to ſome, it be partly Natural and partly Animal: I ſhall only therefore obſerve, that altho' it is ſomewhat in our Power to regulate that Action, by drawing in more or leſs Air at pleaſure, yet we are very well ſatisfied no Creature can impriſon it in the Lungs, or keep it out two Minutes, with-

without a manifeſt Violence to Nature; ſo that it ſeems to be chiefly natural, there being nothing in it voluntary, further than that we can, in ſome meaſure, help ourſelves in Accidents which may happen to thoſe Parts, which cannot but occaſion Pain as often as the Lungs and Cheſt are extended or depreſs'd, if we ſhould let them have their full Liberty.

But beſides the Uſe of the Lungs in Reſpiration, by the Air which they perpetually draw in, they invigorate the Blood, and render it more fit for the ſeveral Functions of Life. And this will appear reaſonable, when we conſider that the whole Maſs of Blood takes its Courſe through the Lungs, before it is detach'd into any other Part of the Body; ſo that during its Progreſs there, it is not only purged from many of its thinner Impurities, which viſibly fly off from the Mouth and Noſe in breathing, but alſo from its groſſer Parts, which by Expectoration are diſcharged through the Pipes of the *Aſperia Arteria*. And as the Blood-veſſels accompany the Windpipe in all its Branches, the Blood itſelf is not only thought to be thereby cooled, but at its return is believed to give a moderate Temperament to the Heart, which, no doubt, muſt be very much heated by the Perpetuity of its Motion.

The Thymus. Having thus given a ſhort Account of the Heart and *Pericardium*, as alſo of the Lungs and Windpipe, together with their ſeveral Uſes, I ſhall, before I leave this middle Cavity, take ſome notice of that large Kernel called the *Thymus*. It is ſo called from the reſemblance it bears to a Leaf of *Thyme* in its ſhape, and is ſituated acroſs the uppermoſt Part of the Breaſt, along the Collar-bones, covering them on the inſide.

Its Uſe. Its Uſe is to prevent the two large Branches of the *Aorta* and *Cava* from being hurt by the ſharp Edges of theſe Bones in their Paſſage over them. And as it ſerves to this Purpoſe chiefly (there being no Veſſels or excretory Ducts viſible in its Subſtance) it is therefore much larger in Foals than in grown Horſes, as it is indeed proportionally in all other young Animals; becauſe the older any Creature grows, the Coats of the Blood-veſſels become the more nervous and ſtrong, and therefore not in ſuch danger of being abraded.

§. IV.

§. IV. *Of the* Larynx, *and* Pharynx, *with the Tonſils*, &c.

Tho' theſe do not properly belong to the Cheſt, yet as I have already treated of the Gullet and Windpipe, to which the *Larynx* and *Pharynx* are united; and as the one has Communication with the lower *Venter*, and the other with the Cheſt, I have therefore choſe to take notice of them under this Diviſion, leaving thoſe Parts by which they are circumſcribed, to be conſidered with the Bones and Muſcles.

The Larynx.

The *Larynx* is compoſed of five Cartilages or Griſtles; the firſt of which is call'd *Scutiformis*, becauſe it reſembleth a Shield: The next is call'd *Annularis*, from its likeneſs to the Ring which the *Turks* wear when they go a ſhooting: The third and fourth, becauſe they are joined together under one common Tegument, and reſemble an Ewer, are therefore termed *Guttales*; theſe two form the *Glottis* or little Tongue: The fifth is named the *Epiglottis*, becauſe it is placed above the *Glottis*. The Subſtance of this is ſoft, and in ſhape like an *Ivy-leaf*, and ſerves as Valves to hinder any thing from falling into the *Windpipe*.

Its Uſe.

Theſe Cartilages are mov'd by ſeveral Pair of Muſcles, and ſerve principally to frame and modulate the Voice in all Creatures, and are therefore the Inſtruments of neighing in Horſes.

The Tonſils.

The *Larynx* has two Pair of Glands or Kernels belonging to it; one Pair is placed on its upper Part, and at the Sides of the *Uvula*, and are called the *Tonſils*; and by ſome, in human Bodies, the *Almonds of the Ears*. Theſe ſeparate a great deal of the Slaver which comes from a Horſe's Mouth, and ſerve to moiſten not only the *Larynx*, to which they chiefly belong, but alſo the *Gullet*, by which means every thing paſſes down it the more eaſily.

The other Pair are plac'd at the lower End of the *Larynx*, one on each ſide of the *Scutiform*, or Shield-like Griſtle; theſe in Horſes are very large, and are ſwell'd when a Horſe has the Glanders.

The Pharynx.

The Top of the Gullet, or *Pharynx*, which is ſo call'd from its Office, becauſe it carries and conveys Food from the Mouth towards the Stomach; is ſomewhat more fleſhy than the reſt of the Gullet, being alſo ſeated in the upper Part of the Throat behind

behind the *Larynx*. It has ſeveral Muſcles whereby it acts, but theſe ſhall be alſo treated of hereafter.

TABLE III. Shewing all the Parts of the middle Cavity, or Cheſt.

Fig. 1. Repreſents thoſe Parts *in ſitu.*

AA. *The outward Teguments laid back.*
B. *The Breaſt-bone, and ſome part of the Ribs alſo laid back, to ſhew the Parts contained in the ſaid Cavity.*
C. *The great Kernel called* Thymus.
D. *The Heart.*
EE. *The right and left Lobes of the Lungs.*
F. *The* Mediaſtinum.
G. *Part of the Midriff.*

Fig. 2. Shews the *Vena Cava*, and right Ventricle of the Heart diſſected.

A. *The Orifice of the Coronary Vein.*
B. *The treble-pointed Valves.*
CCC. *The Fibres which faſten the Ends of the Valves to the Subſtance of the Heart.*
DD. *The Sides of the Ventricle.*

Fig. 3. Shews the left Ventricle alſo opened lengthways, to ſhew its Valves.

A. *The Pulmonary Vein coming from the Lungs.*
BB. *The Valves called* Mitrales.

Fig. 4. Shews the Lungs diveſted of their *Parenchyma*, or fleſhy Subſtance.

A. *The* Larynx.
B. *The Windpipe.*
CCCC, &c. *Its various Branches.*
DDDDD, &c. *The innumerable little Bladders at the Extremities of theſe Branches.*

CHAP.

TAB. III.

Fig. 1.

Fig. 3.

Fig. 4.

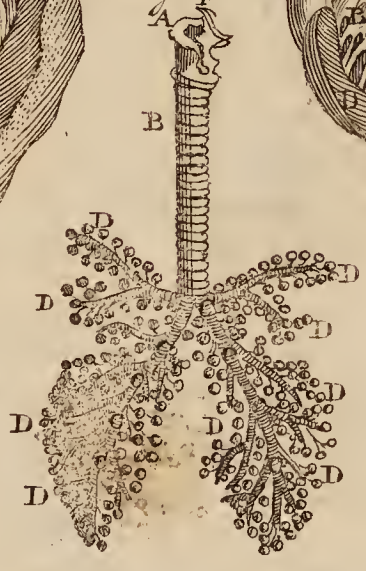


Fig. 2.

CHAP. IV.

Of the upper Cavity, or Head.

§. I. *Of its proper containing Parts.*

The Head.

AS the Parts already deſcrib'd have always been eſteem'd the Seat of the *Vital* Faculty, ſo the Head is accounted that of the *Animal*, it being the Origin from whence all Senſations are deriv'd.

Its proper containing Parts.

The proper containing Parts of the Head are reckon'd to be theſe five; namely, the *Muſcles*, the *Pericranium*, the *Perioſteum*, the *Skull*, and the *Meninges*, or Membranes contain'd within it: Leaving the Muſcles and the Skull to be treated of in their proper Places, I ſhall begin with the *Pericranium*.

It is a very thin Membrane ſpread over the whole Skull, adhering every where to the *Perioſteum*, excepting where the Temporal Muſcles come between them. There are a great number of ſlender Fibres, which paſs from it thro' the *Suturæ* or Seams of the Skull to the *Dura Mater*, or uttermoſt Membrane of the Brain; which Fibres ſerve to ſtay that Membrane in its place, ſo as to hinder the Brain from being hurt by the hardneſs and unevenneſs of the Skull in violent Concuſſions of the Muſcles of the Head.

The * *Perioſteum*, to which the *Pericranium* adheres, is a Subſtance of the ſame Nature and Uſe, only that it is ſomewhat thinner. It is endued with an exquiſite Senſe, from whence ſometimes ariſes an exceſſive Pain when the Bones are wounded, they being themſelves altogether inſenſible.

Theſe two Membranes have Arteries from the *Carotids*, and Veins from the *external Jugulars*, and are chiefly of uſe to cover and defend the Skull from outward Injuries, which otherwiſe would be expoſed and laid bare by every ſlight Accident.

Dura Mater.

Immediately under the Skull we obſerve the *Dura Mater*, ſo call'd from its Texture, which is very firm; and likewiſe, as it has been generally believ'd to give Origin to moſt Membranes through-

* *The* Perioſteum *is believed by modern Anatomiſts to be only an Expanſion of the Tegaments of the Muſcles of the Head.*

out the Body. It is the uppermoſt Membrane peculiar to the Brain, which it involves and covers on all Parts, and is ſo well faſten'd to the *internal Proceſſes* of the Skull, that it cannot eaſily be removed; and beſides the Communication which has been obſerved to be between it and the *Pericranium*, it is tied to the Membrane underneath it, to wit, the *Pia Mater*, and to the Brain itſelf by the Blood-veſſels, which penetrate the Skull, and are inſerted in it, and paſs through it.

The Falx. This Membrane is double, as the *Peritonæum* and *Pleura*, and ſends forth a Production, which in Man reſembles a Sickle, and is therefore called the *Falx*, it being broad towards the hind-part of the Head, and narrow and ſharp towards the Noſe, and curved at Top. Tho' it be of a Shape ſomewhat different in a Horſe, yet Anatomiſts have given it the ſame Name. This divides the upper Part, or *Cortical* Subſtance of the Brain, directly in the Middle, into a right and left Side. Within its Duplicature are ſeveral Cavities call'd the *Sinus's* of the *Dura Mater*; the longeſt of which runs lengthways from before to the Noll, where it is divided into ſome Branches, whereof two deſcend downwards to the Bottom of the *Occiput*, and a third to the *Glandula Pinealis*. Theſe are ſuppoſed to be Ciſterns that contain the ſuperabounding Blood, which is emptied into them by the Arteries, and ſuck'd up again at leiſure by the Veins.

The Pia Mater. The *Pia Mater*, which immediately involves the Brain, and adheres to it in all its Convolutions and Folds, is a very thin Membrane, but of exquiſite Senſe; for which Reaſon ſeveral Anatomiſts have been of Opinion, that all the Nerves which ariſe from the Head, derive their Coats from it, and not from the *Medullar* Part itſelf. It is furniſh'd with an infinite Number of *Arteries*, which ſpring from the *Carotids* and *Cervical Arteries*, and *Veins* from the *Jugulars*; all which are very ſmall, but finely interwoven one with another.

The Uſe of theſe Membranes. Theſe two Membranes are not only of uſe to cover and involve the Brain, in order to preſerve it, and to keep its looſe Subſtance together, but alſo to ſuſtain the Veſſels that enter into it. And moreover, they are further uſeful, as they make up the two innermoſt Coats, which ſheath the Pith of the Back.

§ II.

§ II. *Of the Brain and* Cerebellum, *with the* Medulla Oblongata, *and Pith of the Back.*

The Brain.

The Brain of a Horſe is much leſs in Proportion than the Brain of a Man; but is compoſed of a Medullary Subſtance, and has moſt or all the ſame Parts which are diſcoverable in a human Head.

It is divided into three Parts, *viz.* the *Cerebrum*, *Cerebellum*, or Brainlet, and the *Medulla Oblongata.*

The *Cerebrum* contains all that Subſtance which lies uppermoſt in the Head, and which is divided into two Halves by the *Falx* above deſcribed: Its Outſide is of an aſhy Colour, and form'd into ſeveral Convolutions and Windings, but not with any viſible Regularity, as the *Cerebellum*; its Inſide is white, and therefore call'd the *Corpus Calloſum.*

The Cerebellum, *or Brainlet.*

The *Cerebellum* is divided from the *Cerebrum* by a Production of the *Pia Mater*, which alſo affords a particular Cover to all its Folds, which keeps them ſeparate and apart from each other. This is made up of four Parts, whereof two are lateral, one on each Side; the other two are in the Middle, ſtanding before and behind; they are ſomewhat orbicular, and are call'd the *Proceſſus Vermiculares*, from the Reſemblance they bear to the Worms in rotten Timber.

The Medulla Oblongata.

The *Medulla Oblongata* is the Beginning of the *Spinal Marrow*; it is of an uniform, white, and compact Subſtance, harder than the Brain or *Cerebellum.* It ariſes from ſix Roots, two of which ſpring from that Part of the Brain, which is call'd the *Corpora Striata*; the other four ariſe lower, and more backward, from thoſe Protuberances which are term'd the *Nates* and *Teſtes.* It is round, being in length about two Inches within the Head, before it paſſes out at the *Noll*, whence it is continued along the *Chine* downwards to the Fundament, and through all that Paſſage is term'd the *Spinal Marrow* or *Pitch* of the Back. This has, beſides the *Pia Mater* and *Dura Mater*, another Membrane, which forms its outermoſt or third Coat, and is ſaid to ariſe from a ſtrong Ligament which binds together the fore-part of the Rack-bones.

But before I proceed to the Uſe of the Brain, it will not be amiſs to take a View of its Parts ſomewhat more narrowly,

rowly, that the Learner may be the more fully inſtructed in the Knowledge of that, which in all Animal Bodies is ſo abſolutely neceſſary and eſſential to Life and Motion. In order to which, I ſhall follow the uſual Method of Diſſection, beginning with its Underſide, having already taken a general Survey of the whole.

The Rete Mirabile.

The firſt thing, which is the moſt obſervable on that Side, is the *Rete Mirabile* ſpread all over the Bottom of the Brain, and is a curious Net-work of Blood-veſſels form'd out of the ſmall Twigs which ſpring from the largeſt Branches of the *Carotid* and *Cervical* Arteries, having paſſed through the Skull by proper Holes in the Bones of the Temples. Theſe Veſſels are the more adapted and fitted to the Nouriſhment of the Brain, as they are thus interwoven one with another, by which Means the Blood takes a much longer Stay than if they obſerv'd a more ſtreight and equal Direction.

The Glandula pituitaria.

The *Glandula pituitaria* is the next thing obſervable: Towards the Bottom of the Brain it is incloſed within the Membranes, and ſeated in a ſmall Cavity in the *Os Cunieforme*, or Wedge-like Bone, appointed by Nature for that Purpoſe.

The Infundibulum.

It has a Conduit call'd the *Infundibulum*, or Funnel, which conveys the Excrements of the Brain into it; and for that Reaſon Anatomiſts have believed there was a Paſſage from it to the Noſe: But later Enquiries have diſcover'd two ſmall Ducts which it ſends off to the *Jugular Veins*; ſo that ſome are of Opinion, it is again mixed with the Blood. This Funnel, or *Infundibulum*, is ſaid to take its Riſe from the fore-part of the third Ventricle, into which this Moiſture ſeems to be firſt ſeparated, and is only convey'd by it to the Gland above-mention'd, where it probably undergoes another Degree of Refinement, that it may be the better adapted to the Purpoſes of Nature.

Anatomiſts have, it ſeems, been very much puzzled to find proper Reſemblances for ſeveral Parts of the Brain, hav-

The Nates *and* Teſtes.

ing diſtinguiſh'd ſome of them by the Name of *Nates*, or Buttocks; and others by that of *Teſtes*, or Stones. Theſe come next under our Conſideration: They are four orbicular or round Prominencies, which jet out from the *Medulla Oblongata*, or Beginning of the Spinal Marrow; the two firſt, to wit, the Buttocks, being the largeſt, and the two Stones, which are leſſer, being only Appendages to them. The

The Corpora Striata.

The *Corpora Striata*, ſo call'd from their being ſtreaked or chamfered, are only the Ends of the two Thighs, which proceed from the Buttocks; by theſe the *Medulla Oblongata* adheres to the Brain, as has been obſerved; and by the *Nates* and *Teſtes* above deſcribed, it adheres to the *Cerebellum* or Brainlet.

The Glandula Pinealis.

Between the Buttocks is placed that noted Gland, call'd the *Glandula Pinealis*, and has been thought by ſome Philoſophers to be the Seat of the Soul, tho' modern Anatomiſts have ſo far degraded it, as to make it only the *Penis* or Yard of the Brain, both on Account of its Situation, and probably as it ſeems to be of no other Uſe but to ſeparate a little clear *Lympha* from the Arterial Blood.

The Anus.

Between the Buttocks and near this little Gland, there is a ſmall Chink, to which ſome have given the Name of *Anus*, or Arſe; others have call'd it the *Vulva*; whether it has obtain'd this Appellation in deriſion of the other, is not material.

The Ventricles.

As for the *Ventricles* of the Brain, which by ſome have been reckon'd four, by ſome three, and by others but one; I ſhall not trouble the Reader about the Number, but only take Notice, that they are ſituated in the Middle of the Brain, reaching forwards towards the Noſe, and downwards towards its Bottom, in Shape of a Half-moon. The Uſe of theſe Ventricles is, according to the lateſt Enquiries in Anatomy, to ſerve as a Receptacle for that Portion of the *Serum* which is ſeparated from the *glandulous Skin* that inveſts them, and from the *Glandula pituitaria*, and is thought to be again imbibed by the Veins, and by them conducted afreſh into the Maſs of Blood. They are likewiſe thought of Uſe to give a free Paſſage to the Blood in thoſe Channels call'd the *Plexus Choroides*, that run along their Sides, which probably might be too much compreſs'd by the great Weight of the Brain, had not Nature found out that free and eaſy Situation for them.

The Fornix.

Beſides thoſe Parts already deſcribed, there are to be found in the Brain the *Fornix*, the *Septum Lucidum*, and the *Corpus Calloſum*.

We have already taken Notice of the *Corpus Calloſum*, as being the inner Subſtance of the Brain, which is diſtinguiſh'd from the cortical Part that involves it by its Whiteneſs, &c. The *Septum Lucidum* is only that Partition which divides the *Ventricles*; and the *Fornix* is a kind of Vault

or Arch which riſes between the Brain and the *Medulla Oblongata*, and ſerves to bear up the upper Part of the Brain, that it may not preſs too hard upon the ſubjacent Parts.

The Uſe of the Brain. Now as to its Action and Uſe, it is very certain, the Brain, according to the Philoſophers Terms, is the chief Seat of the *Animal Faculty*, as the Heart is the Fountain of the *Vital*. The Animal Spirits being prepared out of its *Parenchyma*, or marrowy Subſtance, and from thence conveyed into the Nerves, which communicate Senſe and Motion to all Parts of the Body.

The animal Spirits. Theſe Spirits are firſt of all form'd out of the *Vital*, or in other Words, out of the *Arterial Blood*, which is conſtantly ſent by the Heart to the Brain, where there are innumerable Twigs diſperſed, not only through its *Cortical*, or greyiſh Subſtance, but alſo through its white and *Medullary* Subſtance; ſome of which Twigs ſpring from the *Plexus Choroides* and *Rete Mirabile* above deſcribed, and others from the *Carotids* themſelves immediately. The ſuperfluous *Serum* is ſeparated by the Glands; and that Portion of the Blood, which is not changed to Animal Spirits, is taken up by the Veins, and returned back again from whence it came. As ſoon as theſe Spirits are elaborated, or rather, as ſoon as the Blood has undergone ſo many different Mortifications and Changes in the Capillary or Hair-like Veſſels of the Brain, as to render its Particles fine enough to paſs through the inner *Medullar* Subſtance, they then enter thoſe Fibres which compoſe it, and ſeem to be no other than a large Bundle of *Tubuli* or little Pipes, which (if the Compariſon may be uſed) ſomewhat obſerve the ſame Oeconomy with thoſe of the Kidnies, which paſs from the external *glandular* Parts to the *Caruncul Papillares*. Theſe little Particles, or rather Spirits, are conveyed by the aforeſaid *Tubuli* to the upper Proceſſes of the *Medulla Oblongata*, to wit, the *Corpora Striata*, *Nates*, and *Teſtes*, &c. and are there emptied into the Nerves, whoſe inner Subſtance is white and fibrous, like the *Medulla* from whence they ſpring,

Their Uſe. After this ſhort Account of the Formation of the animal Spirits, the next Thing that occurs, is in what Manner they become the Inſtruments of Senſe and Motion. In order to give the Reader a general Idea of this, which is as much as can be done in ſo ſmall a Treatiſe, it will be neceſſary in the firſt Place to conſider the Subſtance

Subſtance of a Nerve, which is very ſolid and compact, proceeding by a Sort of Gradation from that of the Brain; for as the *Corpus Calloſum*, or inner Subſtance of the Brain, is more firm than the *Cortical* Part, ſo a Nerve is even at its Origin ſome Degrees beyond that in Solidity; by which Means it is the more adapted to its peculiar Functions. But beſides the Solidity and Compactneſs of the Nerves, their Tenſeneſs is alſo a great Means of their Action; for as the Blood-veſſels, which have no other Senſe but what is borrowed from them, and as their Office is only to carry vital Spirits for the common Nouriſhment of the Body; as theſe are therefore branched off in many Circumvolutions and Turnings, and are form'd irregularly in ſuch Meanders as we obſerve in Brooks and Rivulets: And as ſome Branches are ſent upwards, and others downwards, as is neceſſary, in order to their ſeveral Functions; ſo the Nerves, on the other hand, as they take their Origin from the Head and Spine, are detach'd from thence into all Parts of the Body in ſuch manner, as they may be every where braced as ſtreight as the Strings or Cords of an Inſtrument; by which Means they have a free and uninterrupted Undulation, and as in all their Branchings, they are little or no ways contorted, but for the moſt Part form compleat and perfect Angles, the ſaid Undulation is communicated as entirely to their Origin, as if their Courſe was directly ſtreight from it.

And therefore as the Nerves are of a very compact and ſolid Form, and can be braced and extended in ſuch Manner as has been obſerved, and conſequently endued with Elaſticity, they muſt eaſily and ſuddenly communicate all Senſations to the Imagination, there being no Part of the Body which does not participate of ſome little *Fibrillæ* or Threads detached from them; or, according to ſome, there being no Part of the Body, which is not more or leſs adapted to receive the nervous Juice; by which Means a cloſe and intimate Correſpondence is kept up with the Nerves; ſo that whenever an animal Body is touched on any Part, it is preſently ſenſible of that Touch, by virtue of the Communication which they keep between the Head and all Parts of the Body.

Now as to Motion, to which the Nerves are equally ſubſervient, that (I think) is termed *Voluntary* in a Man, and *Spontaneous* in a brute Creature, as the one is ſaid to act by the Determination of the *Will*, and the other by *Inſtinct*; but this is not material, ſince both are ſaid to be pro-

duced by the Determination of the Animal Spirits; for when any Creature goes to move, the Spirits are thought to be detached in a more than ordinary Quantity into thoſe Parts which are to be put in motion. And as the Arterial Blood always accompanies the Spirits, and is equally determined with them, the Muſcles are thereby fill'd or emptied, according as the Will or Inſtinct directs, as we ſhall ſee more fully hereafter.

But before I leave this Subject, it may perhaps be expected that I ſhould give ſome Account of the Nature of thoſe Spirits which are ſaid to flow in the Nerves, and are reckon'd the principal Cauſe of Action in them. To ſatisfy thoſe who have a Curioſity that way, I ſhall only in brief take Notice, that theſe are thought by ſome to be of a viſcous and clammy Nature, though compoſed of very keen Particles: And this ſort of Compoſition they think is agreeable to that Elaſticity and Springineſs, which is obſervable in the Nerves. Others have denied any ſuch thing as a Juice to be in the Nerves; becauſe when a Nerve is cut aſunder, there is no viſible Bore or Cavity in it; neither are there any *Poruli* or little *Interſtices* perceiveable in it. But it is very certain, according to the common and unalterable Laws of Nature, whereby all Bodies are made up of Parts, and theſe alſo made up of other Parts, they muſt therefore have *Interſtices*, though they be imperceptible; and that Juice which flows in them, whether between thoſe *Interſtices* only, or any other way, tho' it be alſo imperceptible, yet it is that which we not improperly denominate the *Animal Spirits*. Though we can ſay but very little more than this, that it is the moſt ſubtle of all the Juices which are to be met with in an Animal Body, and therefore the beſt ſuited to the Services for which it is appointed.

§. III. *Of the Riſe and Progreſs of the Nerves.*

Beſides the Nerves, which ariſe from the *Vertebræ* of the Neck, Back, and Loins, there are nine Pair which take their Origin immediately within the Skull.

The firſt Pair of Nerves. The firſt are thoſe which go to the Noſe, and are therefore called the *Olfactory* Nerves, and by ſome the *Mamillary Proceſſes*, becauſe they are round at their end like a Pap: They riſe from the Shanks of the *Medulla Oblongata*, betwixt the *Corpora Striata* and the Chambers of the *Optic Nerves*, from

from thence running along the Bottom of the Brain; after increasing and growing broader, they are divided into a great many Twigs, which receive outer Coats from the *Dura Mater*, having only before a single Integument from the *Pia Mater*. Many of these Twigs pass through the Holes of the Sieve-like Bone to the Nose, where they help to compose the Organs of Smelling.

The second Pair.

The second Pair are the *Optic*, or seeing Nerves; these rise a little behind the former, out of the *Medulla Oblongata*: At their Rise they are somewhat soft, being cover'd only with the *Pia Mater*; but as soon as they reach the *Dura Mater*, they become cloathed by it, as the *Olfactory Nerves* above described. This outermost Coat constitutes the *Sclerotica*, or horny Tegument of the Eye; and from the *Pia Mater* proceeds the next Coat of the Eye call'd the *Uvea*, from its Resemblance to a Grape in Colour: And lastly, the marrowy Substance forms the *Retina*, or Net-like, which by some is call'd its *third Coat*.

The third Pair.

The third Pair are call'd the *Eye-movers*: These arise from the Bottom of the *Medulla Oblongata*: At the Rise they are united, which is the Reason why some believe, when one Eye is carried towards any Object, the other is also directed towards the same. As the *Optic* Nerves pass thro' the first Hole of the Wedge-like Bone, these pass through the second, until they come to the Muscles of the Eye, where they are dispersed; by their actuating the Muscles, the several Motions of the Eye are performed.

The fourth Pair.

The fourth, or *Pathetick Pair*: These take their Rise different from all the rest, *viz.* from the Top of the *Medulla Oblongata*, behind the *Nates* and *Testes*, and passing along the Side of the *Medulla*, are afterwards hid in the *Dura Mater*, until they reach the Hole thro' which the last Pair do pass, which they accompany, until they are inserted in the *Trochlear* Muscles of the Eyes; these are call'd by Dr. *Willis* the *Pathetick Nerves*, which move the Eyes in all Passions and Affections.

The fifth Pair.

The fifth Pair take their Beginning in a Horse a little below the former, tho' in a human Subject they seem to arise from the *Cerebellum*. These are made up of a Bundle of Fibres gather'd together, so that they look to be a Number of Nerves springing from one common Origin, which send out Branches into all Parts

of

of the Head, *viz.* to the Eyes, the Palate of the Mouth, the Noſe, but chiefly to the lower Jaw. The Temporal Muſcles, and Muſcles of the Face, and ſome Branches which go downwards, inoculating with the ſixth Pair, conſtitute the Root or the firſt Trunk of the *Intercoſtal Pair*. It is owing to the ſeveral Branches and Inoculations of the Nerves following, that there is ſo great a Sympathy and Conſent among all thoſe Parts where they take their Progreſs.

The ſixth Pair. The ſixth Pair inoculate with the fifth, after they have paſſed ſingle through the ſame Hole of the Skull, and been hid ſome time under the *Dura Mater*; after which they ſend back ſome Branches, which conſtitute the Beginning of the *Intercoſtal Nerves*. Each of theſe are divided, near the Orbit of the Eye, into two, one being ſpent on that Muſcle of the Eye which draws it outwards; the other on that which is only proper to Brutes, called the *ſeventh Muſcle*.

The ſeventh Pair. The ſeventh Pair are the *Auditory Nerves*. Theſe in a human Head take their Riſe from under the *Annular* Proceſſes of the *Cerebellum*, but in a Horſe from the Sides of the *oblong* Marrow. They have two Proceſſes, one of which is ſomewhat ſoft, and is carried thro' the Hole of the *Os petroſum* into the Cells of the Ears, which it cloaths with a very fine Membrane, and by which the Sounds are conveyed into the common Senſory; the other is ſaid to conduce chiefly to Motion, ſending forth ſeveral Slips to the Tongue, Lips, Mouth, and Noſe, actuating the outer Organs of the Voice; others taking their Courſe to the Muſcles of the Forehead, and Eyelids, and ſome to the Muſcles of the Ears, aſſiſting a Horſe in moving his Eyes and Ears, upon hearing or ſeeing any thing that is aſtoniſhing to him.

The Eighth Pair. The eighth Pair is generally termed the *Par vagum*, or wandring Pair, becauſe they inoculate and keep up a Communication with the Branches of many other Nerves, and are diſtributed, not only to the Head, but alſo into many other Parts of the Body, particularly to the Heart, the Lungs, and Stomach, as alſo to all the *Viſcera* in the lower Belly.

The ninth Pair. The laſt Pair, reckon'd by Dr. *Willis* the ninth and laſt, which ariſe out of the Skull, but by ſome, to be only Branches of the fifth and ſixth Pair, becauſe they take their Origin from ſome of their recurring Branches. This Pair has alſo ſeveral Inoculations, and

and are form'd with other Branches in ſeveral *Plexus's*, as thoſe laſt deſcribed, but not ſo numerous. They take their Courſe chiefly to the *Meſentery* and *Loins*, ending towards the *Fundament* in ſeveral ſmall Twigs.

The Nerves which ariſe without the Skull.

Having deſcribed the Nerves which take their Origin within the Skull, we proceed in the next Place to thoſe which derive their Beginning from between the Joinings of the Neck, Back, and Loins, which ſhall, in a Manner, be but juſt named; they being in Number thirty-ſeven, whereof ſeven ariſe from the Neck, ſeventeen from the Back, and thirteen from the Loins and *Os Sacrum*.

Thoſe of the Neck are all of them diſperſed, partly on the Muſcles of the Face, partly on the Muſcles of the Neck itſelf, and partly on thoſe of the Shoulders and Fore-legs; only it is to be remarked, that a Twig from each Nerve of the fifth Pair, being joined with the like Twigs of the fourth and ſixth, compoſe that remarkable Nerve, which goes to the Midriff, call'd the *Nervus Phrenicus*.

The firſt two Pair, which ariſe from between the *Vertebræ* of the Back, communicate with the lowermoſt of the Neck, ſending forth ſome Twigs to the Neck and Shoulders: The ſecond, as alſo all that follow, ſend each of them a Twig to the *Intercoſtal* Nerve, or Nerve of the ninth Pair, their other Branches being chiefly ſpent on the *Intercoſtal* Muſcles, and Muſcles of the Back; with ſome ſmall Slips towards thoſe of the lower Belly.

As theſe are chiefly diſperſed among the Muſcles of the Back, and the *Intercoſtal*, and the Muſcles of the lower Belly, ſo thoſe of the Loins, and thoſe alſo which ſpring from the *Os Sacrum*, are diſperſed into the Muſcles of the Loins, Hips, and hinder Legs, only that the *anterior*, or fore-branches of the firſt Pair of the Loins, are ſpent on the fleſhy Part of the *Midriff* and the Muſcle *Pſoas*, and the *poſterior* Branches on the Muſcle call'd the *Longiſſimus Dorſi*.

The Yard of a Horſe, and the Womb of a Mare, are alſo furniſhed from the *anterior* Branches of the Loins, and the Stones from the *anterior* Branches of the *Os Sacrum*, ſent off to them from the fore-part of the Thigh.

§ IV. *Of the Eyes, and their ſeveral Parts.*

The Eyes.

Every one knows that the Eyes are the Organs or Inſtruments of Seeing the Ideas of all outward Objects being conveyed by them to the common Senſory.

They

They are of a convex, globular Figure, incloſed within their proper Lids; which is an Orbit or Socket made for that Purpoſe out of the Bone.

The Eyelids. The Eyelids, of which I ſhall firſt take Notice, ſerve as a Safeguard to preſerve them from Duſt, and other external Injuries. They are compoſed of the Skin, fleſhy Pannicle, and Muſcles which are all wrought into an exquiſite Fineneſs: The inner Membrane, which is very ſmooth, that the Eye may move the more eaſily under it, is a Production of the *Pericraneum*; the Extremities or Edges are hard and griſtly, partly to help their Action, and partly that they may meet cloſe together. As to the Fat which lies among the Muſcles, it is of the ſame Uſe as in moſt other Parts, to keep the Eye moiſt, and eaſy in its Motion.

The Humours and Tunicles of the Eye. The Eye itſelf is compoſed of three *Humours*, and four *Tunicles*.

The Adnata. The firſt of its *Tunicles* is call'd *Adnata*; it ariſes from the *Pericranium*, and is ſpread all over the White of the Eye; by which Means it keeps it firm in its Orbit or Socket: It is of exquiſite Senſe, and is very full of Blood-veſſels, which are perceivable at all times, but eſpecially when the Eye is any ways hurt.

The Sclerotica. The next, which is the firſt of its proper Coats, is called the *Sclerotica*, from its Hardneſs: It ariſes from the *Dura Mater*, being opaque on its hind-part, but clear and tranſparent, like Horn, on its fore-part; from whence it obtains another Name, and is call'd the *Cornea*.

The Choroides. The third, call'd *Choroides*, from its Reſemblance to the *Chorion*, which inwraps the *Fœtus* in the Womb. This ariſes from the *Pia Mater*, as it alſo forms the innermoſt Coat of the *Optick* Nerve. It is black on its Inſide, and open on its fore-part the whole Breadth of the *Pupilla*. The fore-part of this Coat is alſo diſtinguiſh'd from its back-part by the Name of *Uvea*, from its reſembling the Colour of a Grape. To this belongs the *Ligamentum Ciliare*, becauſe it conſiſts of ſlender Filaments, like the Hair of the Eye-lids. The Uſe of theſe Filaments is to widen and conſtringe the Cryſtalline Humour, by contracting or opening the Perforation of the *Uvea*.

The Retina. The innermoſt or fourth *Tunicle*, is an Expanſion of the Subſtance of the *Optick* Nerve, and

and is call'd the *Retina*, becauſe it encompaſſeth the glaſſy Humour, like a Net. By a Combination of the Rays of Light on the fine Filament of this Coat, and the Reflection which is cauſed by the Opaqueneſs of the *Sclerotica*, and the Blackneſs of the Inſide of the *Uvea*, all external Images are convey'd diſtinct to the Imagination; whereas if the Rays were not thus collected on the *Retina*, there would be no ſuch Thing as diſtinct Viſion.

The *Humours* of the Eye, which come next to be conſider'd, are in Number three.

The outermoſt is call'd the *aqueous*, or watery Humour, being thin and fluid, like Water; it fills up the Space between the *Cornea* and Cryſtalline Humour in the forepart of the Eye. *The* aqueous *Humour.*

The *Cryſtalline* is the next, ſo call'd from its Brightneſs, being clear and tranſparent, like Cryſtal; it is incloſed in the *vitreous* or glaſſy Humour; it is look'd upon to be the chief Inſtrument whereby the Rays of Light are collected upon the filamentous Expanſion of the *Retina*. *The* Cryſtalline *Humour.*

The laſt is call'd the *Glaſſy* Humour: It is not ſo ſolid as the Cryſtalline, but exceeds both it and the watery Humour in Quantity; it is partly convex, excepting that Cavity where it receives and ſurrounds the Cryſtalline. It is not ſo bright as the Cryſtalline, but yet tranſparent, that the viſible Species, received into the Cryſtalline Humour, might not be reflected on before they reach the *Retina*, but ſhould be tranſmitted to it pure and unmix'd. *The* vitreous *Humour.*

§ V. *Of the Ears.*

The Ear is divided into the External and Internal; the External is that Part which a Horſe moves backward and forward at Pleaſure, and is ſo well known, that there needs but little to be ſaid about it. Its Uſe is partly for Ornament, and partly to gather all Sounds, and tranſmit them to the Internal. *The Ear.*

The Internal Ear conſiſts of ſeveral Parts, which are very curious, and are ſeated in the Cavity of the *Os Petroſum*. *Its Parts.*

The firſt of theſe is the *Drum*, with its Cord and Muſcles. The Drum is a very thin and tranſparent Membrane, being an Expanſion of the ſofter Proceſs of the *Auditory* Nerve; it is very dry, that it *The Drum.*

may

may the better contribute to Hearing; and ſtrong, that it may the better endure loud Sounds, or any other external Injuries; for if once this be broke, or any way relax'd, a Deafneſs muſt unavoidably enſue.

The Concha, *with the ſmall Bones contained in it.*

Within this Membrane there is a Cavity call'd the *Concha*, wherein are four little Bones, which are bound together by a ſmall Ligament proceeding from the Cord of the Drum: The firſt is call'd the *Hammer*, which lies upon the ſecond, call'd the *Anvil*. The third is named the *Stapes*, or Stirrop; but in a Horſe it is triangular, like the *Greek* Letter Δ. Upon the upper Part of the Stirrop, the longeſt Foot of the Anvil ſtands. The fourth is call'd *Orbicular*; it is of a round Shape, and tied with a ſlender Ligament to the Side of the Stirrop, where it is faſten'd to the Anvil.

Their Uſe.

Theſe Bones are a Defence to the Drum, and preſerve it from being torn, or beat inwards by the violent Vibrations of the outward Air in loud Sounds, and are thus aſſiſting to the Senſe of Hearing: When the external Air beats upon the Drum, it is driven againſt the Hammer, which ſtrikes upon the Anvil, as the Anvil beats againſt the Stirrop; and as this Force is more or leſs exerted, ſo the Stirrop opens the oval Window more or leſs, and proportionably the Sound appears louder or lower.

The Concha.

The Cavities within the *Os petroſum* are in Number three: The firſt, wherein theſe four little Bones are ſituated, is call'd the *Concha*, from its reſembling the Shell of a Tabor. When the Membrane is ſtruck upon by any outward Sound, the Echo is made in this Cavity, as in a common Drum.

There are in this Cavity divers Inſtruments, whereof ſome are for Pulſation, as the four little Bones above-mention'd; ſome are for conducting the Air into the other Cavities, ſuch are the two ſmall Perforations, call'd the Windows; and a third Sort are thoſe by which the pituitous Matter, collected within this Cavity, is diſcharged towards the Palate and Noſe.

The oval Window.

The firſt of theſe two Perforations, being the uppermoſt and largeſt, is from its Figure nam'd the *Oval Window*, which is kept ſhut next the *Concha*, by the *Baſis* of the Stirrop, as often as the Sound ceaſes. The other, which is round, is always open,

open, having no Covering, and is divided by the *Os ſquamoſum* into two Pipes; one of which tends to the *Cochlea*, the other into the *Labyrinth*.

The Labyrinth.

The *Labyrinth*, which is the ſecond Cavity, by its ſeveral Turnings and Windings, which are ſomewhat circular, modulates the Sounds in ſuch Manner as they may be leiſurely communicated to the Auditory Nerve, which is diſperſed thro' the Membrane that inveſts this Cavity. There is, beſides the two Windows which open into this Cavity, one Perforation which opens out of it into the inner Cavity call'd the *Cochlea*, into which the Air paſſes, after it has been agitated in this Cavity and the *Concha*. Beſides theſe, there are four other ſmall Holes for the Ingreſs of the nervous Fibres that are inſerted on the Membrane, which cloaths it.

The Cochlea.

The *Cochlea*, which is the third and innermoſt Cavity, is ſo call'd from the Reſemblance it hath to a Snail's Shell, eſpecially in its ſpiral Windings; it is far leſs than either of the former, but inveſted, as the others are, with a thin Membrane, into which alſo the ſlender Fibres of the Auditory Nerve do enter. This Cavity is fill'd with the internal inbred Air, as well as the former, by which the Echo is made to the Impulſe of the internal Air upon the *Tympanum*: And the Auditory Nerve being expanded upon the Membrane, which lines all thoſe Cavities, it is ſuddenly affected therewith, whereby it comes to be communicated to the Original of the Nerves, where all Sounds are diſtinguiſh'd.

§ VI. *Of the Noſe and Mouth.*

The Noſe.

As the Ear is made up of Parts, whereof ſome are External, and ſome Internal; ſo the Noſe is alſo compoſed of the like Parts.

The external Parts of the Noſe are made up of Skin, Muſcles, Bones, Cartilages, and Veſſels of all Sorts.

Its Parts.

The Skin is extremely thin, and without Fat, and adheres ſo faſt to the Muſcles and griſtly Part, that it can hardly be ſeparated from them.

The Bones, which make up its Cavities, are ſome of them common to it and the Forehead, and ſome of them proper to the Noſe only. The Griſtles are in Number five, which ſhall be treated of hereafter with the Bones.

The

Its Veſſels. The Veſſels of the Noſe are Veins from the Jugulars, Arteries from the Carotids, and Nerves from the third Pair, beſides the Olfactory Nerves which are proper to it.

It is lin'd on its inſide with a fine Membrane, which taketh its Riſe from the *Dura Mater*. There are on the back-ſide of this Membrane abundance of little Kernels, which ſeparate a great part of the Moiſture which comes from the Noſe. It has alſo another Membrane, call'd its *Muſcular Membrane*, which is ſaid to contract and draw together the Noſtrils.

The Os Cribriforme. On the upper part of the Noſe is ſeated the *Os Cribriforme*, or Sieve-like Bone, which is perforated in many places, that the ſmall Twigs, which ſpring from the Mamillary Proceſſes, may have a free Paſſage thro' it into the inſide of the Noſe, ſerving there to be the immediate Organs of Smelling.

As the Ear is form'd in ſuch manner as to collect and gather together all Sounds into its Cavity, ſo the Noſe is likewiſe adapted to gather into it all Smells; which Senſation is perform'd in this manner: The *Effluvia*, which fly off from all odoriferous Bodies, being carried in the circumambient Air, are communicated to all Creatures as ſoon as they draw in their Breath at the Noſtrils; but more to a Horſe than to many others, by reaſon he ſucks in moſt of his Breath that way. As ſoon as theſe *Effluvia*, or odoriferous Particles are got within the Noſe, thoſe little Branches of the Olfactory Nerves, which are ſpread all over its inſide, are immediately affected therewith, and immediately communicate that Senſation, whether it be grateful or unpleaſant, to the common Senſory, where it is diſtinguiſh'd.

Its Uſe. Thus the Noſe is not only uſeful, as it helps all Creatures to diſtinguiſh that which is proper for their Food, from that which may be hurtful to them, as it is the chief Inſtrument of that Inſtinct; but it is alſo uſeful to diſcharge a great deal of Excrements from the Blood.

The Mouth. We come now to the Mouth, which is the laſt Thing to be conſider'd under this Diviſion; and is generally divided into that which is call'd External, and that which is term'd Internal.

The Lips. The Lips are its external or outward Parts, which are alſo divided into the upper and under: Theſe are compoſed of a ſoft, fungous Subſtance,

ſtance, as alſo ſome proper Muſcles cover'd on their outſide with Skin and Hair, but on the inſide with a Membrane common to the Mouth and Stomach.

The Uſes of the Lips are to gather in Hay or Oats, or other Food, and to retain it while it is chewing; they likewiſe ſerve to keep the Gums and Teeth from external Injuries.

The Internal Parts of the Mouth.

The Parts of the Mouth are ſome of them fleſhy and ſome of them bony: The fleſhy Parts are the Lips laſt deſcrib'd; as alſo the Muſcles of the Cheeks and lower Jaw. The bony are the upper and lower Jaw, together with the Teeth.

All theſe Parts, excepting the Teeth, are cover'd or lin'd with a pretty thick Membrane, which in the Palate is rugged and knotty, by reaſon there are a great number of Glands lie under it, out of which part of the Slaver is ſeparated into the Mouth.

The Parts contain'd within the Mouth, are the Teeth, the *Os Hyoides*, or Bone of the Tongue; beſides which, there are the Gums, the Palate, the *Uvula*, the Kernels call'd the *Almonds of the Ears*, the Tongue and its Muſcles.

The Gums.

The *Gums* are compoſed of a fleſhy Subſtance deſtitute of Motion, that ſo the Teeth might the better be faſten'd in their Sockets.

The Palate.

The *Palate*, ſo call'd from its being fenc'd or pal'd in with Teeth, forms the upper part of the Mouth. It extends from the back part of the Mouth to the fore-Teeth, but is not ſo hollow in a Horſe as in human Subjects; it is compoſed of eighteen Bars, and conſiſts of Bones and peculiar glandulous Fleſh, which are cover'd with a thick Coat, which is full of Perforations or little Holes, that afford a Paſſage to the Slaver, which is ſeparated from the Glands above-mention'd.

The Uvula.

The *Uvula* is a red fungous Kernel, ſomewhat longiſh, ſeated at the back-part of the Palate, where the internal Paſſage of the Noſe opens into the Mouth, hanging downward, with a ſmall but bluntiſh end over the Chink of the *Larynx*.

The Uſe of the *Uvula*, is to moderate the Coldneſs of the Air before it paſſes into the Lungs, and to hinder any thing from falling into the Windpipe: In a Horſe it is of other uſe, as it hinders the Water from going into the Noſe when he drinks. When this is much relax'd, it prevents

the Food from passing into the Gullet, and makes it apt to return back into the Nose.

The Tongue. In describing the *Tongue*, I need say nothing as to its Figure, it being sufficiently known to every one. It is cover'd with two Membranes, the outward cloathing only its upper Part, being also very porous. The inward Membrane covers the whole Tongue, and is thin and soft, having many Protuberances branching out of it, which are inserted into the Pores and Holes of the outward Coat.

It is of a fleshy Substance, having Vessels of all sorts, to wit, Veins from an inward Branch of the external Jugulars, Arteries from the Carotids, and Nerves from the fifth and eighth Pair.

There are also belonging to the Tongue, several Muscles, by which all its Motions are perform'd; but of them hereafter. These Muscles are interlarded with a considerable deal of Fat, which, no doubt, serve somewhat to facilitate their Action.

The Use of the Tongue is not only for Taste, but also to serve as an Instrument to turn every thing taken in at the Mouth, that it may be the more expeditiously chewed, and afterwards to thrust it backwards towards the Stomach.

Underneath the Root of the Tongue there is a pretty large Kernel, from whence two Pipes, call'd the *Salival Ducts*, do spring; one from the fore, and another from the hind-part; these two are soon united into one, which runs towards the Chin. But Dr. *Wharton* has observ'd, that in a Horse there are other pretty remarkable Glands that stand on each side this Duct, and discharge themselves into it. This Pipe ends in other small Glands towards the *Frænum* or Bridle of the Tongue, which discharge some part of that Slaver which keeps the Mouth continually moist. Besides this Duct, there are two others of the same use, which arise out of the Kernels under the Ear, called the *Parotides*, and run on the outside of the Jaw-bone to the middle of the Cheek, where they open into the Mouth.

The Use of the Slaver is the same with the *Saliva* or Spittle in Men, and serves continually to moisten the Mouth, and all the solid part of the Food, whilst it is in chewing, and being swallow'd down with the Aliment, it is believ'd by some Anatomists to contribute to Digestion.

TAB. IV.

TAB. IV.

Fig. 1.

Fig. 2.

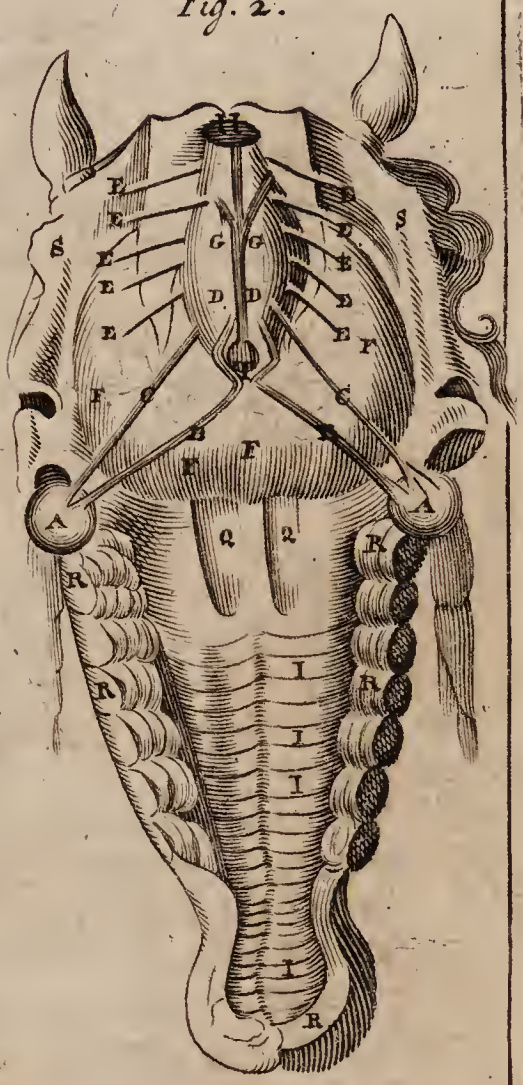


Fig. 3.

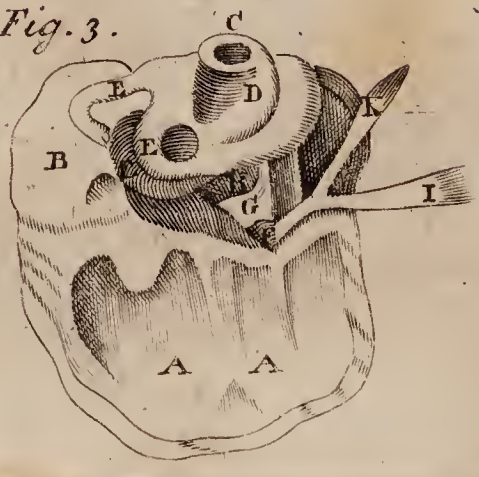
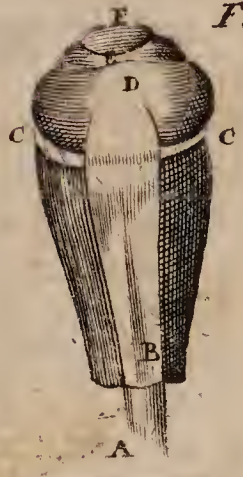


Fig.



TAB. IV. *Fig.* 1. Shews the Brain *in ſitu*, when the upper Part of the Skull is taken off.

A. *The Subſtance of the Brain cover'd with the* Pia Mater, *only the* Dura Mater *being removed.*
BB. *The* Cerebellum, *or After-Brain.*
CC. *The* Proceſſes Vermiformes, *or Worm-like Proceſſes.*
D. *A Portion of the* Medulla Oblongata.
E. *The* Dura Mater *ſo far as it contains the* Medulla Oblongata, *cut aſunder, and turned back.*

Fig. 2. Repreſents the under Side of the Brain and Spinal Marrow, with the Origin of the Nerves.

AA. *The Eyes.*
BB. *The* Optick *Nerves.*
CC. *The moving Nerves of the Eyes.*
DD. *The* Pathetick *Nerves.*
EEEE, &c. *The other Nerves ariſing within the Skull from the Spinal Marrow.*
FFF. *The Bottom of the Brain.*
GG. *The* Medulla Oblongata; *or Beginning of the Spinal Marrow.*
H. *The Spinal Marrow cut off.*
IIII. *The Bars of the Palate of the Mouth.*
QQ. *The Cavity that goes from the Palate to the Noſe.*
RRRR. *The Teeth.*
SS. *The* Dura Mater *turn'd back.*
T. *The* Glandula Pituitaria.

Fig. 3. Shews the Bones of the Ear, *&c.*

AA. *The Inſide of the* Os Temporis, *or Temple-bone.*
B. *The* Os Spongioſum, *or Spungy Bone.*
C. *The Hole thro' which the Auditory Nerve does paſs.*
D. *The greater Winding of the* Cochlea.
EEE. *The three bony half Circles that form the Labyrinth.*
F. *The* Malleus, *or Hammer.*
G. *The* Incus, *or Anvil.*
H. *The* Stapes, *or Stirrop.*
I. *The external Muſcle of the Ear.*
K. *The internal Muſcle.*

Fig. 4. Repreſents the Eye taken out of the Head.

A. *The* Optick *Nerve cut off.*

B. *The Origin of the Muſcles.*

CC. *Their ſeveral Terminations into the Coats of the Eye.*

D. *The common Coat of the Eye, call'd the* Adnata, *or* Conjunctiva.

E. *The* Cornea, *or horney Coat.*

F. *The* Pupilla, *or Apple of the Eye.*

CHAP. V.

Of the Muſcles.

§. I. *Of the Muſcles of the Eye-lids and Eye.*

Three Pair of Muſcles belonging to the Eye-lids.

THE Eyelids have three Pair of Muſcles, one Pair to open them, and two to ſhut them.

That which openeth the Eyelids is call'd *Rectus*, or *Aperiens*, from its Office. It ſpringeth with a ſlender, but fleſhy Beginning, from the ſame Place as the *Elevator* of the Eye doth, to wit, at the Hole through which the *Optic* Nerve paſſes into the Orbit, and holds the ſame Courſe with it, till at laſt parting from it with a pretty broad, but thin Tendon, it is inſerted into the Griſtle at the Edge of the upper Eyelid, where it ſerves to open the Eyelid by lifting it up.

The other two Muſcles of the Eyelids are call'd *Shutters*, and otherwiſe *ſemicircular*, becauſe each of them runs the Length of the Eyelid; they are ſeated between the *Membrana Carnoſa*, and the inner ſmooth Skin that lines the Eyelids. That which draweth down the upper Lid, is larger than the Muſcle which moveth the lower Lid to ſhut it.

The frontal Muſcles are alſo thought to contribute ſomething to the Motion of the Eyelids, as they ariſe from the Skull, near the Coronal Suture, and are inſerted in the Eyebrows; for by their Action they contract the Skin of the Forehead, by which Means the upper Eyelid is ſometimes drawn a little upward.

The Eyes have Seven Pair of Muſcles belonging to them.

The Eyes have ſeven Pair of Muſcles, of which four are ſtreight, two oblique or ſlanting, and the other Pair circular, or round. The ſtreight ſerve to move the Eyes upwards

wards and downwards, the oblique move them obliquely, and the circular Pair keep the Eyes ſuſpended in their Place. They all ariſe from the ſame Origin, to wit, from the Membrane that inveſts the Orbit of the Eye, near the Hole thro' which the *Optick* Nerve doth paſs into the ſaid Orbit, touching one another at their Beginning, but immediately ſeparating into fleſhy round Bodies, from which they again degenerate towards their Termination into a thin membranous Subſtance, which is inſerted into the horny Coat of the Eye, encompaſſing it as far as it is white.

Theſe Muſcles have their ſeveral Appellations from their ſeveral Actions. The firſt of the ſtreight Muſcles, from its Office of pulling up the Eye, is call'd *attollens*, and in Man ſometimes *ſuperbus*; as the ſecond is call'd *deprimens*, or *humilis*. The third is call'd *adducens*, becauſe it pulleth the Eye towards the Noſe: And the fourth *abducens*, or *indignatorius*, from its Office of drawing the Eye to the outer Corner; which Turn or Aſpect of the Eye betokens Anger or Scorn.

When theſe Muſcles act ſeparately, they have theſe four ſeveral Motions; but when they all co-operate or work together, they have but one tonick Motion, which is principally to keep the Eye ſteady and fix'd; but in Beaſts that have the ſuſpending Muſcle, that Action is perform'd chiefly, if not altogether by it.

The next are the two oblique Muſcles, which alſo are term'd the *Circumagentes*, from their rolling the Eye about, and are diſtinguiſh'd by the Names of *Major* and *Minor*; they being longer than the other, though ſomewhat ſlenderer; the longer ariſes from the ſame Origin with thoſe above deſcribed, and endeth in a ſmall round Tendon, which paſſeth through the tranſverſe Griſtle call'd *Trochlea*, into the inner Corner of the Eye. This rolleth the Eye inwards, as the other (which riſes from the Chink in the lower Part of the Orbit, and has the ſame Inſertion with the *Major*) rolls it towards its outward Corner.

The ſeventh, or round Muſcle, is call'd the *Suſpenſorius*, or *ſeptimus Brutorum*, being peculiar to Brutes only. It is ſhort and fleſhy, encompaſſing the *Optick* Nerve, and is inſerted in the hinder Part of the *Cornea*. This Muſcle is not only aſſiſtful in the Tonick Motion of the Eye, but is alſo uſeful to keep the Eye ſuſpended, leſt, by looking continually towards the Ground, it ſhould hang too much outward.

§ II. *Of the Muſcles of the Noſe, Lips, and Cheeks.*

The Noſe, Four Pair of Muſcles. The Noſe is moved by four Pair of Muſcles, two Pair call'd the *adducent* or cloſing Muſcles, and two Pair term'd the *abducent* or widening Muſcles.

Firſt Pair. The firſt Pair of the *abducent* ariſe from the upper Jaw-bone, near the firſt proper Pair of the Lips, and are inſerted partly into the lower Part of the Wings, or griſtly Circumference of the Noſtrils, and partly into the upper Part of the upper Lip.

Second Pair. The ſecond Pair take their Origin near the Eye, with an acute and fleſhy Beginning, and end on the Wings, as the other Pair, but more expanded. The Uſe of theſe two Pair of Muſcles, is to draw the griſtly Circumference of the Noſtrils upwards, and ſo to widen and open them.

Third and fourth Pair. The other two Pair, or *adducent* Muſcles, ariſe, the one from the Root of the Griſtle, which aſcending croſs-ways to the Ridge or Top of the Noſe, are there inſerted. The other are hid in the Cavity of the Noſtrils under the inner Coat that cloaths them, and at their Inſertion are ſpread on the griſtly Circumference.

The firſt Pair of theſe Muſcles being contracted, depreſs the *Alæ* or Griſtles of the Noſe; and the latter Pair draw them inwards, and ſo cloſe the Noſtrils; to which Motion, the orbicular or round Muſcle of the upper Lip is alſo aſſiſtant; for by its drawing it downwards, it doth at the ſame time contract the Noſtrils.

The Lips. To the Lips belong ſeveral Pair of Muſcles, ſome of which are proper to them alone, and others are common both to them and the Cheeks.

Two Pair common. The firſt common Muſcle is call'd the *Quadratus*, or four-ſquare Muſcle: It ariſes from one of the *Vertebræ* of the Neck, and ſome Part of it from the Shoulder-blade, the Collar-bone, and Breaſt-bone; from all which it aſcends obliquely to the Chin, Lips, and Root of the Noſe, which Part it draws ſlanting downwards.

The ſecond is the *Buccinator:* This ſprings from almoſt the whole Length of the upper Jaw-bone, at the Root of the Gums; it is ſeated under the upper Part of the former, and

and is ſpread over the whole Dimenſion of the Cheek. Beſides its uſe in contracting the Cheek in Horſes and other brute Creatures, it greatly aſſiſts the Action of chewing, by turning the Meat which falls between the Teeth and the Cheek, over again to be ground and broken.

Five pair proper, and an odd one.

The Muſcles which are proper to the Lips only, are accounted by Anatomiſts five Pair, and one ſingle Muſcle. The firſt is called *Par attoliens*, or Lifters up of the Lip. This Pair ſpring from the upper Jaw, where it forms the Hollow of the Cheek, and are inſerted in the upper Lip near the Noſe. When both theſe Muſcles act together, they draw the upper Lip directly upwards; but if only one acts, then is but one ſide drawn upward obliquely. The Action of theſe Muſcles is very perceivable when a Stone-horſe ſmells a Mare, or when any other Horſe ſmells at Dung, or any other Thing that ſends up pungent *Effluvia* into the Noſtrils.

Firſt Pair.

Second Pair.

The ſecond Pair are the *abducent*, or Drawers of the Lip on one ſide: They ariſe from the Cavity that is under the *Os Jugale*, from whence they take their Courſe on each ſide to the middle of the upper Lip, where they are inſerted with a ſtrong round Tendon; theſe jointly move the Lip upwards and outwards, as the former; and when they act ſeparately, they aſſiſt the former, by helping to draw the Lip ſideways.

Third Pair.

The third Pair is called by *Riolanes*, *Zugomaticum*, or *Jugale*, from their Riſe, which is outwardly from the Proceſs of the Bone of that Name. Theſe reach to the ſides of the upper Lip, and are inſerted near the Corner of the Mouth. Their Uſe is to draw the Lip ſideways upwards.

Fourth Pair.

The fourth Pair is called *Deprimens*, from their Office of drawing the under Lip downwards. They ariſe fleſhy and broad from the lowermoſt Part of the lower *Mandible*, from whence each marches obliquely unto the under Lip, and are inſerted into it about its middle. This Pair aſſiſt in the ſame Action with the firſt of the common Muſcles, called the *Detrahens quadratus*.

Fifth Pair.

The fifth Pair, or oblique *Detrahens*, from their Office of drawing the lower Lip obliquely downwards and upwards: They take their Beginning from the ſides of the lower Jaw, from whence they aſcend upwards, and are each inſerted into the Corners of the lower Lip.

The Orbicularis, *or odd Muscle.*

The odd Muscle, or *Orbicularis*, so called because it goes round both Lips, and sometimes *Constringens*, as it serves like a Sphincter, to purse up or contract the Mouth, makes up the greatest part of the Lips, and has all the other Muscles inserted into it.

§. III. *Of the Muscles of the lower Jaw.*

Five Pair belonging to the lower Jaw.

The upper Jaw, being immoveable, hath no Muscles, but the lower Jaw, having divers Actions, is moved by five Pair.

First Pair.

The first are called the *Temporal Muscles*, because they are seated on the Temples. They spring on each side from the Bones of the Forehead, the *Sinciput*, the Temples, and *Os Cuneiforme*, or Wedge-like Bone, and descend under the *Os Jugale*, between the *Periosteum* and *Pericranium*, to the acute Process of the lower Jaw, into which they are inserted: These Muscles pull up the lower Jaw, and shut the Mouth.

Second Pair.

The second Pair arise from the *Styloid* Process of the Temporal Bone, fleshy and round towards their Origin, but lose their fleshy Substance, and degenerate into a nervous and round Tendon, as they approach the Flexure of the lower Jaw-bone; and then becoming fleshy again, are inserted into the inner side of the lower Jaw, towards its middle or fore-part; these being assisted by the *Quadrati* above described, pull down the Jaw, and so open the Mouth.

Third Pair.

The third Pair are called the *Masseters*, being very assistant in the Office of chewing, by moving the Jaw to the right and left Side; each of these hath two Beginnings, one from the Suture where the fourth and first Bone of the upper Jaw are joined; and the other from the *Os Jugale*, and are largely inserted into the outsides of the lower Jaw: These, by reason of the diversity of their Fibres, move the Jaws divers ways.

Fourth Pair.

The fourth Pair are called *Pterygoideum externum*: These have a double Beginning, as the former, springing partly from the upper and outside of the Wing-like Process of the *Os Cuneiforme*, or Wedge-like Bone, and partly from the rough and sharp Line of the said Bone, from whence, descending downwards, they are inserted in the inside of the lateral Part of the lower Jaw; by

by which Means they move forwards, ſtretching the Teeth of the lower Jaw further out than thoſe of the upper.

The laſt Pair are call'd *Pterygoideum Internum:* Theſe ariſe from the Cavity of the Wedge-like Bone, and are inſerted in the inner and hinder Part of the lower Jaw. Their Uſe is to draw it backwards, contrary to the former, and alſo aſſiſt the Temporal Muſcle in drawing it upwards. *Fifth Pair.*

§. IV. *Of the Muſcles of the Ears.*

The Muſcles of the Ears in Brutes, eſpecially Horſes, Aſſes, Oxen and other Animals that have large Ears, differ much in Magnitude from thoſe in Man, they being indued with little or no Capacity of Motion; but that is made up in Man by the eaſy Motion of the Head, by which Means he can readily turn himſelf to the hearing of all Sounds; whereas Four-footed Beaſts, wanting that Agility, need to have their Ears always moveable, to receive the Sounds every way, and likewiſe to drive off Flies, and other Inſects that are troubleſome to them, which Men can do with their Hands. *The Muſcles of the Ears.*

Now the outward Ear has four Muſcles, which are conſiderably larger in brute Creatures than in Man; and the inward Ear has two, which are proportionable in both. *The outward Ear four Muſcles.*

The firſt is call'd the *attollens Aurem*, the Lifter up of the Ear: It ariſes at the Outſide of the Frontal Muſcle, from whence being carried over the Temporal Muſcle, it is inſerted in the upper Part of the Ear, moving it upward and forward. *Firſt.*

The ſecond is call'd *detrahens Aurem*, or the Puller-back of the Ear: This ariſes from the Mammillary Proceſſes, and is inſerted into the Root of the Griſtle of the Ear. *Second.*

The third, or *adducens Aurem*, by which the Ear is drawn forwards and ſomewhat downwards, is implanted into the lower Side of the Root of the Ear, and is only Part of the *Muſculus quadratus*, before ſpoken of. *Third.*

The fourth, or *abducens Aurem*, becauſe it draws the Ear backward, takes its Beginning at the *Occiput*, or back Part of the Head, whence it is carried tranſverſely to the hinder Part of the Eye, into which it is inſerted. This Muſcle is aſſiſting to the ſecond. *Fourth.*

The

The inner Ear, two. The firſt of the two Muſcles of the inner Ear, called *Externus Tympani Auris*, or the external Muſcles of the Drum of the Ear, becauſe it moves that Membrane upwards, ariſes from the upper part of the Paſſage of the Ear, and becoming narrower, it grows into a very fine and ſmall Tendon, which runs along the outſide of the Drum, and is inſerted into its Center over the Hammer, which, along with the Drum, it draweth upwards and outwards.

The *Internus*, or inner Muſcle, takes its Riſe from the bottom of the Wedge-like Bone, where it joins to the *Proceſſus Petroſus*; it lies within the Cavity of that Bone, and at its middle is divided into two very ſmall Tendons, whereof one is inſerted into the upper Proceſs of the Hammer, and the other into the Neck of it. The Uſe of this Muſcle alone is to draw the Head of the Hammer obliquely forwards, and alſo to bring it ſomewhat inwards; but when they act both together, they move the *Tympanum* with its ſmall Bones upwards and downwards. This Action is performed as often as an Animal attentively liſtens to any approaching Noiſe.

§. V. *Of the Muſcles of the Tongue, and* Os Hyoides, *with thoſe of the* Larynx, Uvula, *and Throat.*

The Tongue, five Pair of Muſcles. The Tongue has five Pair of Muſcles proper to itſelf, beſides thoſe that are common to it and the *Os Hyoides*.

The firſt Pair are called the *Genioglоſſum*, becauſe they ariſe from the Chin in Men, and are inſerted in the Tongue. In a Horſe they ariſe from the ruggedneſs on the middle of the lower Jaw; in the inner and lower part of it they have ſeveral ſuch Inſcriptions as thoſe on the ſtreight Muſcles of the Paunch, and are inſerted into the lower ſide of the middle of the Tongue. Their Uſe is to move the Tongue forwards; which Action is frequently performed by Horſes when they gather their Meat.

The ſecond Pair, called *Ypſilogloſſum*, becauſe they ariſe from the bottom of the *Os Hyoides*: They are inſerted in the middle of the Tongue, and in their Action are contrary to the former, by drawing it backwards.

The *Mylogloſſum*, or third Pair, ariſe from the inner Part of the lower Jaw, at the Roots of the fartheſt grinding Teeth, and are inſerted into the Ligament which ties the

the Tongue to the Jaws. When theſe act together, they draw the Tongue downwards, but when they act ſeparately, they draw it obliquely to one Side.

The fourth Pair, call'd *Ceratogloſſum*, becauſe they ariſe from the Horns of the *Os Hyoides*, from which reaching to the Sides of the Tongue, they are there inſerted. Their Action is much the ſame with that of the third Pair.

The laſt Pair are call'd *Styloglossum*, becauſe they ariſe from the *Styloides*, or Pen-like Proceſs of the Temple-bones: They are inſerted into the Sides of the Tongue about its Middle. When theſe act ſingly, they draw the Tongue to one Side; but when conjunctly, they pull it upwards and inwards.

Four Pair common to the Os Hyoides *and* Tongue.

The Fork-like Bone of the Tongue, call'd the *Os Hyoides*, hath four Pair of Muſcles, which are common to it and the Tongue.

The firſt Pair is call'd *Sternohyoideum*, becauſe they ſpring from the Inſide of the upper Part of the *Sternon*, or Breaſt-bone, and taking their Courſe cloſe by the Windpipe, are inſerted into the Root of the *Os Hyoides*, which they move downward and backward.

The *Geniohyoideum* is oppoſite to the former, ariſing from the Inſide of the fore-part of the lower Jaw, and is inſerted into the middle Part of the Bone *Hyoides*, which draws it ſtreight upwards and a little forwards.

The third Pair, call'd the *Carachyoideum*, ariſe out of the *Proceſſus Caracoides*, at the upper End of the Shoulder-blade, and run obliquely upwards under the firſt Pair of Muſcles of the Head, and are at Length inſerted into the Horns of the *Hyoides*. Their Uſe is to pull that Bone obliquely downwards.

The fourth and laſt Pair, call'd the *Styloceratohyoideum*, ariſe from the *Styloid* Proceſs, and alſo end in the Horns of the *Os Hyoides*; they move that Bone obliquely upwards.

As the Muſcles of the Cheeks and Tongue ſerve to toſs the Meat to and again in the Mouth, and thoſe of the lower Jaw help to grind it; ſo theſe Muſcles, which are common to the Tongue and *Os Hyoides*, are principally of Uſe to give the Tongue ſuch Motions as forward it into the Gullet, when it is ſufficiently prepared to go into the Stomach.

The Muſcles of the Larynx.

The *Larynx*, or upper part of the Windpipe, has ſix Pair of Muſcles, and one ſingle one. The firſt two Pair being common to it, and all the reſt proper.

The

The firſt of the common Pair is call'd the *Sternothyreoideum*, and by ſome *Bronchium*, or the Weaſand Muſcles: Theſe ariſe from the upper and inner Part of the Breaſt-bone, aſcending by the Sides of the Windpipe to the Shield-like Griſtle, where they are inſerted. Their Uſe is to draw down the ſaid Griſtle, and ſo widen the Chink.

The ſecond Pair, call'd *Hyothyreoideum*, ariſe from the lower Side of the *Os Hyoides*, and are inſerted into the *Thereoid* Griſtle. Theſe are ſaid to ſtreighten the Chink of the *Larynx*, tho' ſome affirm they widen it, and that the other Pair contract it.

Its proper Muſcles. The firſt Pair of the proper Muſcles of the *Larynx*, call'd *Crycothyreoideum Anticum*, becauſe they take their Beginning from the Ring-faſhion'd Griſtle *Cricoides*, and are implanted in the Sides of the *Thereoides*, which they move obliquely downwards, thereby opening the Chink of the *Larynx*.

The next Pair, named *Crycoarytænoideum poſticum*, ariſe contrary to the former, from the lower and back Part of the Ring-faſhion'd Griſtle, and are inſerted in the lower End of the Ewer-like Griſtle, whereby they raiſe it upward and backward, to open and widen the *Larynx*.

The third or lateral Pair, ariſing from the Sides of the Ring-faſhion'd Cartilage, terminate in the Sides of the Ewer-like Griſtle, opening alſo the *Larynx*, by drawing the Griſtles obliquely to one Side.

The fourth Pair are the largeſt and ſtrongeſt of all the proper Muſcles of the *Larynx*, and ariſe cloſe one to another from the Middle of the hollow Part of the Shield-like Griſtle, filling that Cavity through its whole Length, and are inſerted into the two Sides of the Ewer-like Griſtle, aſſiſting the former.

The fifth and laſt, call'd *Arytænoides*, or *Claudens ſecundum*, takes its Riſe from the hinder Line of the Ewer-like Griſtle *Arytænoides*, and is implanted in the Sides of the ſame. This ſingle Muſcle helps to ſtrengthen the Throttle, by drawing both Sides of the Ewer-like Griſtle together.

The Epiglottis *no Muſcles but in Creatures that chew the Cud.* The *Epiglottis*, or Throat-flap, which covers the Chink of the *Larynx*, has no very diſtinct Muſcles, but in thoſe Creatures that chew the Cud; and ſhall therefore be omitted in this Place.

The

The Uvula *two Pair, but very ſmall.*

The *Uvula* is ſaid to have two Muſcles to hold it up, which have alſo very hard and long Names beſtowed on them; but they are ſo inconſiderable, that they are hardly worth Notice.

The Pharynx, *three Pair.*

The *Pharynx*, which is the upper Part of the Gullet, has belonging to it three Pair of Muſcles, and one ſingle one, beſides two Pair of a late Diſcovery. The firſt Pair are call'd the *Spheno-pharingæum*, which ariſe from the Appendage of the Wedge-like Bone, and are inſerted into the lateral Parts of the Palate and *Pharynx*, which they widen in ſwallowing.

The next Pair are call'd *Cephalopharingæum*, ſpringing from that Part of the Head which joins to the firſt *Vertebra* of the Neck, and are implanted on the Outſide of the *Pharynx*, ſtreightning it by their Action, as ſoon as the Food has paſs'd through it, thereby alſo forcing it down the Gullet.

The third Pair, call'd *Stylopharingæum*, ariſe from the *Styloid* Proceſs of the Temporal Bone, and are inſerted into the Sides of the *Pharynx*, which they dilate and widen.

One ſingle Muſcle, or Sphincter.

The ſingle one, which has the Name of *Oeſophagiæus*, encompaſſeth the upper Part of the Gullet, forming its Sphincter, and ſerving for the ſame Uſe as thoſe of the Arms and Bladder, to wit, to draw and purſe up the Mouth of the Gullet, as thoſe do the Extremities of the Bladder and ſtreight Gut.

Two Pair diſcover'd by Dr. Browne.

The laſt two Pair, firſt diſcover'd by Dr. *Browne*, were by him call'd *Pterygopalatini* and *Sphenopalatini*. The Uſe of the firſt Pair being to depreſs the *Glandula Palati*, and that of the ſecond to elevate and lift it up.

§. VI. *Of the Muſcles of the Head and Neck.*

Four Pair common to the Head and Neck, and eight proper to the Head.

There are four Pair of Muſcles common to the Head and Neck, and eight Pair proper to the Head only.

The *Maſtoideum*, which modern Anatomiſts reckon the firſt proper Pair, have each a double Beginning, one from the Breaſt-bone, nervous, and the other from the Collar-bone, which is fleſhy; from whence they aſcend obliquely to the Mamillary Proceſſes of the Temporal Bone, into which each is inſerted.

When

When theſe act together, they bend the Head forward, but when ſeparately, they draw it a little to one Side.

The *Splenium* is reckon'd the ſecond Pair, being the firſt of thoſe which pull back the Head; they ariſe from the five uppermoſt *Vertebræ* of the Cheſt, and the five lowermoſt of the Neck, with a nervous Beginning, aſcending to the hinder-part of the Head, where they are inſerted. When theſe act together, they draw the Head backward; but when they act ſingly, they draw it a little to one Side.

The third Pair, named *Complexum*, or *Trigeminum*, becauſe each of them ariſe with three Heads; two from the firſt, ſecond, fourth, and fifth, tranſverſe Proceſſes of the Cheſt, and the third from the Ridge of the ſeventh *Vertebra* of the Neck. All which uniting together, are inſerted into the Noll-bone.

The third Puller back of the Head, or fourth Pair, call'd *Parvum craſſum*: Theſe are ſituated under the former, ariſing nervous from the tranſverſe Proceſſes of the ſix uppermoſt *Vertebræ* of the Neck; but afterwards becoming fleſhy, are carried obliquely upward, and are inſerted into the hindermoſt Root of the *Proceſſus Mammillaris*. When theſe act ſingly, they incline the Head lightly backwards to one Side; but when they act together, they bring it ſtreight backwards.

The *Rectum majus* and *Rectum minus*, which make up the fifth and ſixth Pair, are ſeated one under the other, and are both inſerted into the Noll, aſſiſting the fourth Pair in their Action.

The *Obliquum ſuperius*, which is accounted the ſeventh Pair, ariſe from the Middle of the tranſverſe Proceſſes of the firſt *Vertebra* of the Neck; their Uſe being to nod the Head backwards.

The laſt Pair, call'd *Obliquum inferius*, take their Origin from the Spine or Ridge of the ſecond *Vertebra* of the Neck, and forming an oblique Courſe, terminate in the tranſverſe Proceſſes of the firſt *Vertebra*, being of Uſe to move the Head ſemicircularly. Now the Reaſon why there are ſo many Muſcles appointed to move the Head backwards, is becauſe of its great Bulk and Weight; by which Means it is of itſelf prone enough to incline forward and downward, ſo that it wants not only a Stay, but requireth a greater Force to move it upward or backward.

The

The Muſcles common to the Head and Neck are in Number four Pair, as has been obſerved. *Thoſe common to the Head and Neck.*

The firſt call'd *Spinatum*, becauſe they are ſeated among the Spines of the *Vertebræ*, take their Riſe from the Root of the Spines of the ſeven uppermoſt *Vertebræ* of the Cheſt, and five lowermoſt of the Neck, and are inſerted into the whole lower Side of the Spine of the ſecond *Vertebra* of the Neck. Their Office is to bend the Neck backward, or a little obliquely.

The next Pair is call'd *Tranſverſale*, becauſe they both ariſe, and are inſerted into the tranſverſe Proceſſes of the *Vertebræ*, ariſing from thoſe of the uppermoſt *Vertebræ* of the Cheſt; and being inſerted into the Outſides of all the tranſverſe Proceſſes of the Neck-bones. Their Uſe is the ſame with the firſt.

The third Pair call'd *Longum*, lie hid under the Gullet, ariſing from the Body of the fifth and ſixth *Vertebræ* of the Back, and reaching the higheſt *Vertebra* of the Neck, into which they are inſerted. Their Uſe is contrary to the firſt two Pair, bending the Neck forward when they act together, and when they act ſingly, to one Side.

The laſt Pair is call'd *Triangulare*: Theſe are ſeated forward on the Sides of the Neck, having ſome Perforations, by which Veins, Arteries, and Nerves, paſs out of the Body into the Fore-legs.

§ VII. *Of the Muſcles of the Breaſt.*

Having briefly run over the Muſcles which ſerve to move the Head and Neck, we come now to thoſe of the Breaſt, which actuate the Cheſt, whereof four Pair widen and dilate it, and two Pair contract it. *The Breaſt widened and depreſſed by ſix Pair.*

The firſt of thoſe which ſerve to widen the Breaſt are call'd *Subclavium*, from their Situation under the Clavicle, or Collar-bone. Theſe ariſe from under that Bone, and are implanted into the firſt Rib near the Breaſt-bone, drawing the firſt Rib upwards and outwards. *The four Pair that widen the Breaſt.*

The ſecond Pair call'd *Serratum majus anticum* (from the Reſemblance their Tendons have to the Teeth of a Saw) ariſe from the Inſide of the Shoulder-blade and the two upper Ribs, and are inſerted into the lower five true Ribs and

two

two upper ſhort Ribs, ſo that their Breadth takes up a great part of the ſide of the Cheſt. Theſe co-operate with the firſt Pair in widening the Cheſt, as do alſo the two following Pair, *viz.* the *Par ſerratum poſticum ſuperius*, riſing from the Spines of the three lower Rack-bones of the Neck, and firſt of the Back, and being inſerted into the *Interſtices* of the upper Ribs; and the *Par ſerratum poſticum inferius*, taking their Origin from the Spines of the three lowermoſt *Vertebræ* of the Back, and firſt of the Loins, and having their Inſertions into three or four lower Ribs, before they run cartilaginous.

Theſe four Pair, together with the Midriff, and the widening *Intercoſtal* Muſcles, dilate the Cheſt in Inſpiration, that is to ſay, in drawing in the Breath; and the two following Pair, to wit, the *Triangulare* and *Sacrolumbum*, with the Internal and *Intercoſtals*, depreſs the Cheſt in Expiration, or letting forth the Breath. The triangular Pair having their Riſe from the middle Line of the Breaſt-bone on its inſide, and their Inſertion into the bony ends of the third, fourth, fifth, and ſixth true Ribs: And the other Pair taking their Origin from the *Os Sacrum* and Spine of the Loins, and having their Inſertion into the lower ſide of all the Ribs, about three or four Fingers Breadth from the Ridge of the Back.

The two Pair that depreſs the Breaſt.

§. VIII. *Of the Muſcles of the Back and Loins, with thoſe of the Fundament and Bladder.*

Four Pair common to the Back and Loins.

The Muſcles of the Back and Loins are uſually reckon'd four Pair, which are common to both.

The firſt go by the Name of *Longiſſimi*, from their extraordinary length, being the longeſt of the whole Body, and endu'd with moſt Strength. They ariſe from the *Os Sacrum* and Haunch-bone, and paſſing by the Ridge of the Loins, Back, and Neck, they reach to the Mammillary Proceſſes of the Temple-bones. They are almoſt confounded with the *Par ſacrolumbum*, and the *Semiſpinatum*, in their Paſſage thro' the Loins, but arriving towards the Back, they again part with them, and appear to be diſtinct from them. When both act together, they extend the Back and Loins, but when they act ſingly, they incline the Spine to one ſide. They are of further Uſe to moſt Creatures,

but

but especially to Beasts of Burden, being a Bar and Stay to the whole Back.

The *Par quadratum*, or second Pair, so called from their Figure, being square when join'd together, tho' triangular when separate. They arise broad, thick, and fleshy from the backward and upper Cavity of the Haunch-bone, and from the inner and upper side of the *Os Sacrum*, and are inserted into all the transverse Processes of the *Vertebræ* of the Loins. Their Use is to bend the Racks of the Loins with a right Motion forward or downward, but when one only acts, it draws the Loins to one Side somewhat downwards.

The third Pair, arising from the *Os Sacrum*, are therefore called *Par sacrum*; they spring from that part of the said Bone where the Spine is fasten'd, ending in the Spine of the lowest *Vertebra* of the *Thorax*; but at the same time having in their Passage several Insertions into divers of the Spines and oblique Processes of the *Vertebræ* of the Loins. If these act separately, they pull the Body a little on one side; but when both act together, they extend that part of the Spine to which they are fasten'd.

The last Pair, call'd *Semispinatum*, arise with a nervous Original from all the Spines or Ridges of the *Os Sacrum* and Loins, and are inserted into the transverse Processes of the Loins, and some of the lowermost of the Chest. When all these Muscles of the Back and Loins work together, the whole Back is extended; but if the Muscles of that Side alone, the Body is then inclin'd to that Side.

The Anus *three Muscles.*

The *Anus* hath three Muscles, two call'd the *Levators*, and one nam'd its *Sphincter*.

Its Sphincter.

The Sphincter is seated at the Extremity of the streight Gut, encompassing it all round like a Ring. It is attach'd to the lower *Vertebræ* of the *Os Sacrum*, compos'd of circular Fibres, being of use to contract the Orifice of that Gut, as has been observ'd in another Place.

The two Levators.

The two *Levators*, or Lifters up of the Fundament, are small, broad, and nervous, arising from the Ligaments of the Hip-bones and *Os Sacrum*, from whence, passing by the Sides of the Gut, they adhere to it, and are inserted into the upper part of the Sphincter; a Portion of them also growing to the Root of the Yard, and in Mares to the Neck of the *Matrix*. Their Use is to assist the Muscles of the lower Belly

in the Expulsion of the Excrement, which they do by lifting up the Fundament.

The Sphincter of the Bladder. The Bladder has also its Sphincter, which is composed of circular Fibres, as that of the *Anus*; and in like Manner serves to constringe or purse up its Neck, that the Urine may not pass without a spontaneous relaxing of that Muscle. In Mares, it it seated at the Hole where the Neck of the Bladder opens into the *Vagina*.

Having already taken Notice of the Muscles belonging to the Yard, call'd its *Erectoris* and *Dilatoris*, and the *Cremaster* Muscles, by which the Stones are suspended, as also those of the *Clitoris* in Mares, I shall therefore pass them by in this Place, and proceed to the Shoulder-blade, *&c.*

§. IX. *Of the Muscles of the Shoulder-blade and Shoulder, with those which move the Fore-leg and Foot.*

The Shoulder blade four Pair. The Shoulder-blade has four Pair of Muscles, agreeable to its four several Motions.

The first Pair, call'd *Cucullares*, from the Resemblance they bear to a Monk's Hood, are seated between the two Shoulder-blades, covering the Top of the Withers. These arise thin and fleshy from the hind Part of the Head, but as they pass down the Neck, have other membranous Beginnings from five of its Spines, and from eight or nine of the uppermost of the Chest, and are inserted into the whole Spine of the Shoulder-blade, as also into the Shoulder-bone, and broader Part of the Collar-bone. When the upper Part of this Muscle is contracted, then the Shoulder-blade is thought to be moved somewhat obliquely upwards, because of the oblique Direction of its Fibres; but when that Part which springs from the Withers is contracted, it is then pulled streight thitherward.

The second Pair are call'd *Levatores*, or Lifters: They are situated above the Collar-bone, arising from the transverse Processes of the first four *Vertebræ* of the Neck, and are inserted into the Fore-corner of the Shoulder-blades; these draw the Blades upwards and forwards.

The third Pair, named *Serratum minus Anticum*, lie under the pectoral Muscles, and spring from the four uppermost Ribs, before they turn gristly, by four fleshy Portions, representing the Teeth of a Saw, and are inserted into the Anchor-like Process of the Shoulder-blade: These move the Shoulder-blades forward towards the Chest.

The

The laſt Pair, called *Rhomboides*, are ſeated under the *Cucullares*, and take their Origin from the hinder Proceſſes of the three lowermoſt Spines of the Rack-bones of the Neck, and from the three uppermoſt of the Cheſt, and are implanted into the *Baſis* of the Shoulder-blades, their Uſe being to draw them ſomewhat upwards and backwards.

The Shoulder, nine Muſcles.

The Shoulder has five ſeveral Motions perform'd by nine Muſcles, to wit, backwards, downwards, and circularly.

But before I proceed to a Deſcription of its Muſcles, it will be proper to intimate, that although the Shoulder-blades in Horſes are generally taken for part of the Shoulder, yet Anatomiſts have always diſtinguiſhed between the Shoulder-blade and Shoulder, accounting that Part only to be the Shoulder, which is joined to the Shoulder-blade, and reaches towards the Elbow.

Two Erectors.

The firſt of its Muſcles is called *Deltoides*, from its Figure reſembling the *Greek* Letter Δ. It ariſes fleſhy from the midſt of the Collar-bone, the top of the Shoulders, and the whole Ridge of the Shoulder-blade, and is inſerted in the middle of the Shoulder-bone. This Muſcle not only raiſes up the Shoulder, which is its chief and principal Uſe, but by the various Direction of its Fibres it aſſiſts in other Motions, but eſpecially in that which is circular.

The ſecond Erector of the Shoulder, is named *Supraſpinatus*, becauſe it fills all that Cavity which is between its Spine and upper Edge. It ariſes from the Spine of the Blade, with a long and fleſhy Beginning, and is inſerted into the Neck of the Shoulder-bone by a ſtrong and broad Tendon.

Two Depreſſors.

The *latiſſimus* and *rotundus Major* are the two Depreſſors of the Shoulder; the firſt is ſo called from its Breadth; for, with its fellow, it almoſt covers the whole Back. It ariſes from the tops of all the Spines of the Rack-bones that are between the ſixth *Vertebra* of the Cheſt, and the middle of the *Os Sacrum*, as alſo from the upper part of the Haunch-bone, and is inſerted below the upper head of the Shoulder-bone lengthways.

The ſecond *Depreſſor*, which is the fourth Muſcle of the Shoulder, called *rotundus Major*, takes its Origin from the lower *Coſta* of the Shoulder-blade, and is inſerted into the upper and inner-part of the Shoulder-bone. The Uſe of this, and the laſt deſcribed, is to pull the Shoulder downward.

Two Pair which bring the Shoulder forwards.

The two Pair of Muſcles which bring the Shoulder forward, are called the one by the Name of *Pectoralis*, and the other *Coracoideus*. The *Pectoralis* is ſo called from its Situation on the Fore-ſide of the Breaſt. It ariſes from the Middle of the Collar-bone; its Middle proceeds from the whole Length of the Breaſt-bone, and the Ends of the Griſtles of all thoſe Ribs which terminate in it; and its lower Part ſprings from the ſixth, ſeventh, and eighth Ribs. Its Inſertion is with a broad and ſinewy Tendon into the Shoulder-bone, a little below its Head.

The *Coracoideus* has its Beginning from the *Proceſſus Coracoides*, from whence it reaches to the Middle of the Shoulder-bone, where it terminates. The Uſe of this and the former is to draw the Shoulder forward.

Three move it backward.

The following three Muſcles, to wit, the *Infraſpinatus*, *Subſcapularis*, and *Rotundus minor*, move the Shoulder backward.

The *Infraſpinatus* ariſes from the Baſis of the Blade below its Ridge, and is inſerted by a broad and ſhort Tendon into the fourth Ligament of the Shoulder-bone.

The *Subſcapularis* is ſeated between the *Scapula* and Ribs, and is inſerted into one of the Ligaments of the Shoulder; and the *Rotundus Minor*, which ariſes from the loweſt Corner of the *Scapula*, is implanted into the Neck of the Shoulder-bone.

As to the circular Motion of the Shoulder, that is not performed by any ſingle Muſcle, but by ſeveral of theſe already named, acting ſucceſſively one after another, which is eaſily enough to be conceived by thoſe who carefully obſerve their Origins and Inſertions, and the various Directions of their Fibres. But we ſhall now proceed to thoſe that move the Fore-leg and Foot.

Two Muſcles bend the Fore-leg.

The Fore-leg is bended by two Muſcles, to wit, the *Biceps*, and *Brachiæus internus*.

The *Biceps*, ſo called from its double Head or Beginning, ariſing partly from the upper Brim of the Shoulder-blade, and partly from the Anchor-like Proceſs of the ſame Bone. This Muſcle becometh ſtrong and fleſhy, and runs all along the Inſide of the Cubit-bone to the Knee, where it is inſerted. Its Office is to bend the Cubit forward and ſomewhat inwards.

The ſecond, or *Brachiæus internus*, ſo called in Man, from its Situation on the Inſide of the Arm, and may pro-

properly enough retain the ſame Name in a Horſe. This takes its Beginning near the Inſertion of the *Deltoides*, after which it runs its Courſe as the former, and is inſerted into the Fore-ſide of the Cubit-bone a little above the Knee, and is aſſiſting to the former.

Two extend it.

Two Muſcles alſo extend the Cubit, and theſe are ſeated on its hind-part; the firſt is called *Longus*: It takes its Origin from the lower Rib of the Blade-bone, and deſcending along the hinder Part of the Shoulder-bone, is inſerted into the Outſide of the Cubit-bone, towards the Knee. This draws the Leg backwards, and ſomewhat outwards, and thereby ſtretches it out ſtreight.

The ſecond is called *Brevis*, from its Shortneſs; raiſes it from the hinder Part of the Neck of the Shoulder-bone, and holding the ſame Courſe with the firſt, it is inſerted alſo with it, and aſſiſts it in its Motion.

Two Aſſiſtants.

There are, beſides theſe, two other Muſcles, which give their Aſſiſtance in extending the Cubit, to wit, the *Brachiæus Externus* and *Anconæus*; but *Spigelius* and others have thought the one to be only Part of the *Longus*, and the other a Part of the ſhort Muſcle, and therefore have left them out.

Theſe are all the Muſcles that move the Fore-leg of a Horſe, falling ſomewhat ſhort of the Number of thoſe which move the Arm of a Man, by Reaſon a Horſe has only one ſingle Bone in that Part, whereas there are two in the Arm of a Man, to wit, the *Cubit* and *Ulna*, which ſerve to turn the Arm and Hand round; which Kind of Motion is not any Ways neceſſary for a Quadruped.

Two bend the Shank.

The Shank, which ſomewhat anſwers to the *Metacarp* in a Man, has the ſame Number of Muſcles with the Fore-leg, *viz.* two *Extenſors*, and two *Flexors*.

The firſt of the *Flexors*, or *Benders*, is called *Cubitæus Internus*; it ariſes from the inner Knob of the Shoulder-bone, and is implanted into the inner and hinder Sides of the Top of the Shank. The ſecond may be called the *Cubitæi interni ſocius*, or *auxiliarius*, as having the ſame Riſe, Progreſs, and Inſertion with the other.

Two extend it.

The Extenders of the Shank are the *Cubitæus Externus* and its Fellow, which take their Origin from the outer Knob of the Shoulder-bone, and are inſerted into the outer and Fore-ſide of the Head of the Shank.

The next Joint is the great Paſtern, anſwering to the firſt Joint of the Finger in a Man's Hand, as the little Paſtern does to the ſecond, and the Coffin-Joint to that on which the Nail grows, all which are bended and extended as the former.

The Paſterns, &c. bended by two Muſcles.

The firſt Bender of the Paſterns and Coffin-Joint is call'd *Sublimis*; it ſprings from the inner Knob of the Shoulder-bone, and is inſerted into the Paſterns.

The ſecond is named *Profundus*, ariſing from the upper Part of the Cubit-bone, and bending its Courſe down to the Coffin-Joint, into which it is inſerted.

Extended by two.

They are extended by one conſiderable Muſcle, call'd *Extenſor Magnus*. This ſprings from the outer Knob of the Shoulder-bone, and is inſerted into the fore and outer Parts of the Paſtern and Coffin-Joint.

Laſtly, The Muſcle which anſwers to that call'd *Palmaris* in a Man; it ariſes fleſhy from the inner Knob of the Shoulder-bone, but preſently grows into a ſlender Tendon, which deſcends to the Sole of the Foot.

TABLE V. Repreſents a Horſe ſtanding with his Face towards us, that one may have a full View of all the Muſcles that appear on his Fore-parts.

AA. *Shew the* Par-Maſtoideum.
BB. *The Muſcles of the* Scapula, *or Shoulder-blade.*
CC. *The* Par Trigeminum, *or* Complexum.
DD. *The* Par Triangulare, *or* Scalenum.
E. *The Windpipe in its natural Situation.*
FF. *The* Par Longum *removed from under the Gullet.*
GG. *The Pair of the Noſe, call'd* Philtrum.
HH. *The cloſing Muſcles of the Noſtrils.*
II. *The Muſcles of the Eyelids.*
KK. *The Temporal Muſcles.*
LL. *The Muſcles of the Ears.*
M. *The Frontal, or Forehead Muſcles.*
N. *The* Cucullaris, *or Monk's Hood.*
O. *The* Deltoides *of the Shoulder.*
P. *The* Serratus Major Anticus *ſhrunk up.*
QQ. *The Pectorals.*
R. *The oblique deſcending Muſcle of the lower Belly, ſhrunk from the* Serratus Major.

S. *The*

TAB. V.

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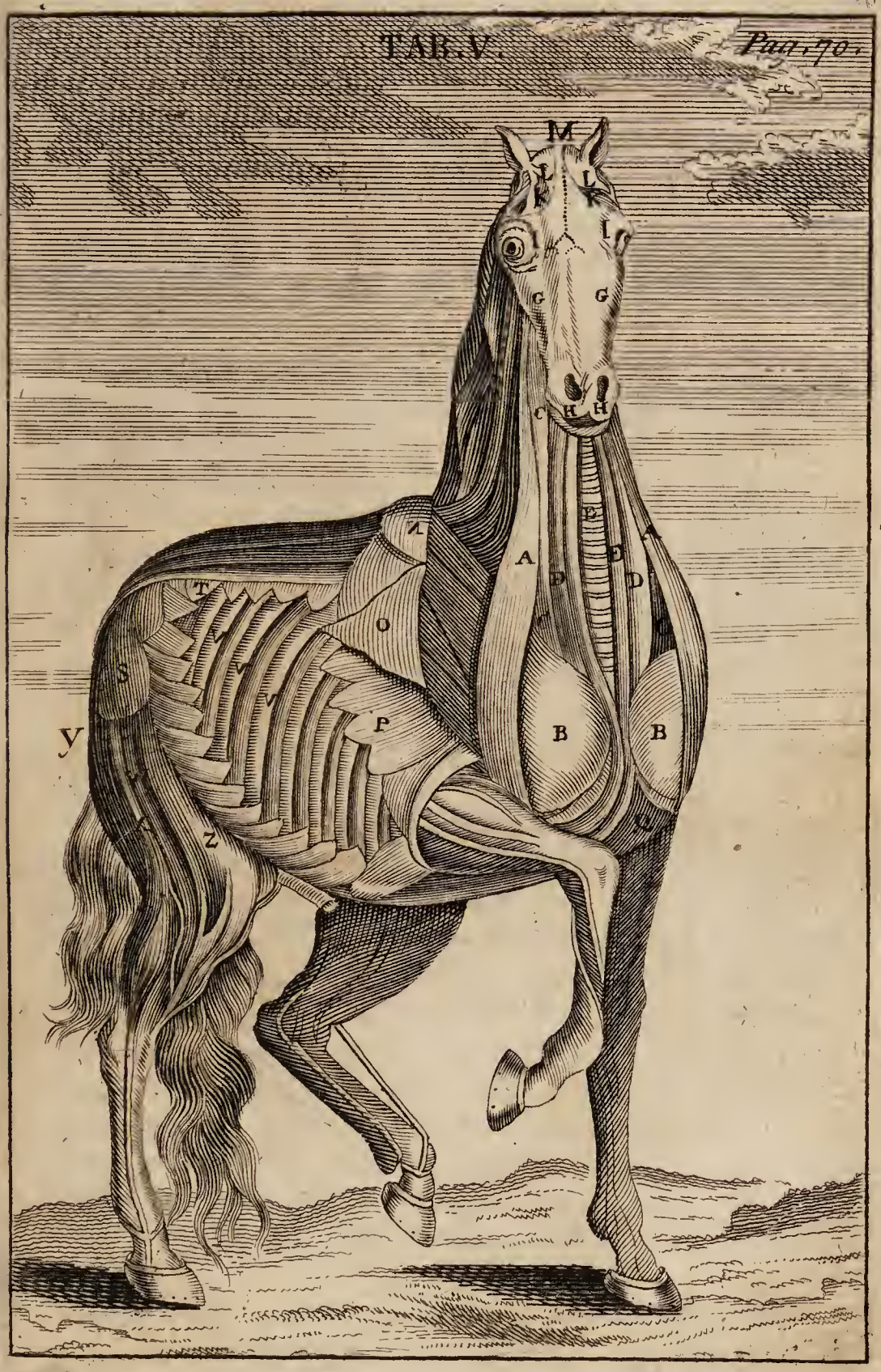

S. *The* Deltoides *of the Thigh, ſo call'd by Mr.* Snape.
T. *The* Serratus Poſticus.
VVV. *The external* Intercoſtal *Muſcles.*
VXY. *The three Buttock Muſcles.*
Z. *The* Vaſtus Externus.
a. *The* Sacrolumbus.
b. *The* Longiſſimus Dorſi.
c. *The* Semiſpinatus.

§ X. *Of the Muſcles of the Thigh, and thoſe which move the hind Leg and Foot.*

The Thigh of a Horſe comprehends that Part which is between the Joint of the *Huckle*, or *Whirle* Bone, and the Stifle.

Three bend the Thigh forward.

It is moved by ſeveral Muſcles, the firſt of which are call'd the Benders of the Thigh, and are in Number three, *viz.* the *Pſoas*, the *Iliacus Internus*, and *Pectineus.*

The firſt of theſe ariſes fleſhy from the tranſverſe Proceſſes of the two lowermoſt *Vertebræ* of the Cheſt, and two or three uppermoſt of the Loins, from whence, deſcending by the Inſide of the *Os Ileum*, it ends in a ſtrong round Tendon, which is inſerted into the Foreſide of the upper Part of the leſſer Head of the Thigh-bone. The Uſe of this Muſcle is to draw the Thigh upward, and ſomewhat inward.

The ſecond, or *Iliacus Internus*, ſpringeth with a ſlender fleſhy Beginning from the Inſide of the Haunch-bone; and being join'd by its Tendon to the former Muſcle, is inſerted by a round Tendon into the leſſer Head, or *Rotator* of the Thigh-bone. This Muſcle is alſo of Uſe to raiſe the Thigh upward, tho' not ſo much inward as the other.

The *Pectineus*, which is the laſt of theſe three Muſcles, ariſes broad and fleſhy from the Line of the Share-bone, near the Griſtle, and is implanted with a broad and large Tendon into the lower End of the Thigh-bone. This draws the Thigh upward and inward, and is that Muſcle which, in Men, helps to lay one Thigh over the other.

This Muſcle, and all thoſe that follow, excepting the two laſt, are inſerted into the lower End of the Thigh-bone, juſt above the *Stifle*; whereas in Men they are moſt, or all of them, inſerted into its proper Part, either at its

Neck, or into one or other of the two Knobs at the lower end of its Neck, called the great and leſſer *Trochanters*. Mr. *Snape* thinks the Reaſon of this Difference is owing to the Shortneſs of the Thigh-bone of a Horſe, compar'd with that of a Man, whereby his Muſcles being very plump and bulky upon its Buttocks, it was neceſſary they ſhould have ſome Space to grow more ſlender, and become Tendinous; and therefore, he ſays, they are extended as far as the Stifle, which anſwers to the Knee in Man. But this is alſo owing to the different Action of the Thigh of a Horſe from that of a Man, which manifeſtly requires its Muſcles to have a lower Inſertion.

Three bend it backward.

As there are three Muſcles which bend the Thigh forwards, it has the ſame Number to bend it backwards.

The firſt is called *Glutæus Externus*, or the moſt outward Buttock Muſcle; it ariſes with a fleſhy Beginning from the Crupper, the Ridge of the Haunch-bone, and from the *Os Sacrum*, and paſſing over the Joint of the Huckle-bone, it ends in a ſtrong and broad Tendon, which is inſerted above the Stifle into the inner Part of the Thigh-bone. Its Uſe is to extend the Thigh, and enable an Horſe to go backward.

The next is called the *Glutæus Medius*, lying in a Man directly under the other, but in a Horſe Side by Side with the other. It riſes from the Spine of the Haunch-bone, a little higher than the other, and from thence deſcends obliquely over the Joint of the Hip, and is inſerted into the lower end of the outerſide of the Thigh-bone. Its Uſe is to extend the Thigh, and to draw it outward and backward, as when a Horſe ſtands to Stale.

The third and laſt of the Extenders is called *Glutæus Minor*, or leſſer Buttock Muſcle; it ariſes round and fleſhy as high as the former, and deſcending obliquely over the Joint of the Hip, to the lower end of the Thigh-bone, is inſerted ſomewhat towards its fore-ſide. This aſſiſts the other in its Action.

Moved inwards by one Muſcle.

The Thigh is mov'd inwards by the *Triceps*, or, according to ſome, the *Quadriceps*, from its having four Heads; the firſt Head riſing nervous from the upper Part of the Share-bone, and deſcending to the Inſide of the lower End of the Thigh-bone. The ſecond beginning fleſhy at the lower ſide of the ſame Bone, and ending a little higher than the former.

The

The third ariſing partly nervous and partly fleſhy, from the under Side of the *Coxendix*, is inſerted near the laſt. The fourth, having a like Origin from the top of the *Coxendix*, runs along the Inſide of the Thigh, and ends in a round Tendon; which joining with the Tendon of the firſt Part of this Muſcle, has the ſame Inſertion with it.

And turn'd outwards by four.

The Thigh is alſo turn'd outwards by four ſmall Muſcles, called *Quadrigemini*, all which are placed one by another, upon the Outſide of the Articulation of the Thigh. The firſt is the Longeſt, and takes its Origin from the Lower and Outer Part of the *Os Sacrum*; afterwards, paſſing over the great *Rotator*, it is inſerted into the Outſide of the lower End of the Thigh-bone.

The ſecond and third ariſe both of them from the Knob of the *Os Iſchium*, near each other, and are inſerted with the firſt.

The fourth is more fleſhy than the Reſt, ariſing from the inner Part of the Knob of the *Iſchium*, and terminating with the former: To theſe muſt be added the *Deltoides* of the Thigh, which ſpring from the Outſide of the Tip of the *Ileum*, with a Sharp beginning, but growing Triangular, is inſerted with a broad membranous Tendon into the Outſide of the Thigh-bone; by its Situation it ſeems to aſſiſt the Action of the *Quadrigemini*.

Turn'd obliquely by two.

But laſtly, the Thigh is turn'd obliquely by two Muſcles called *Obturatores*, or Stoppers. The firſt is called *Obturator Internus*, and takes its Origin from the inner Circumference of the Hole abovementioned, and is inſerted into the Cavity of the great *Rotator*. The *Obturator Externus*, from the external Circumference of the ſaid Hole, and is inſerted in the ſame Cavity with the former.

The Leg has three ſeveral Motions peculiar to it, *viz.* it is bended, extended, and turned obliquely Outwards; to perform all which Motions, there are the ſame number of Muſcles in Horſes as in Man, only that ſome of them are different from thoſe in Men, with reſpect to their Inſertions.

The Leg is extended by five Muſcles.

It has firſt of all five Muſcles, called *Extenders*, of which the firſt is named *Membranoſus*; and by ſome the *Faſcia Lata*, becauſe it involves and covers almoſt all the Muſcles of the Thigh. This Muſcle riſes fleſhy from the upper Part

of

of the *Os Ileum*, near the great Proceſs of the Thigh-bone, and covering the whole Thigh and the Stifle, over which it croſſes, it is at laſt inſerted into the fore and upper Part of the Bone of the Leg. Its Uſe is to extend the Leg directly; or, according to ſome, to draw it obliquely outwards.

The ſecond is call'd *Longus*, ariſing from the upper Part of the Appendix of the *Os Ileum*; and paſſing obliquely down the Thigh, it is inſerted into the Bone of the Leg, a little below the Stifle. This Muſcle not only extends the Leg, but alſo helps to draw it inwards; for which Reaſon, ſome Authors reckon it one of the Benders of the Leg.

The third is call'd *Rectus*, from its ſtreight Courſe: It takes its Beginning from the lower Brim of the Haunch-bone, and deſcends ſtreight down the Foreſide of the Thigh, until it reaches the Stifle, where it turns into a ſtrong and broad Tendon; and adhering to the *Patella*, in its Paſſage over it, it is at laſt inſerted into the Foreſide of the upper Part of the Shank.

The fourth is named *Vaſtus Externus*, becauſe of its great Bulk; it ariſes from the Root of the great *Trochanter*, and from the Neck of the Thigh-bone, cleaving cloſe to its Outſide, until it arrives at the Stifle, where, becoming membranous and broad, and uniting with the Tendon of the ſtreight Muſcle, it is inſerted into the ſame Place with it, but on its Outſide.

The laſt, or *Vaſtus Internus*, riſes from the Root of the leſſer *Trochanter*, and deſcending down the Inſide of the Thigh-bone, it unites itſelf with the former two, after it has paſſed over the Stifle, and is inſerted with them into the ſame Place of the *Tibia*. Theſe three laſt deſcribed Muſcles, joining together at their croſſing the Stifle, form one broad and ſtrong Tendon, which involves the *Paletta*, or Knee-bone of the Stifle, and ties it ſo firmly, that it is almoſt impoſſible for it to be diſplaced.

Bended by four. The Benders of the Legs are in Number four, *viz.* the *Biceps*, the *Semimembranoſus*, the *Seminervoſus*, and *Gracilis*.

The *Biceps* riſes ſharp and nervous from the Appendage of the *Coxendix*, and paſſing along the Outſide of the Thigh, is inſerted into the Outſide of the *Appendix* of the *Tibia*, or Leg-bone; this bends the Leg, by pulling it backward.

The

The next, according to *Bartholin*, (who follows the Order in his Deſcription of thoſe Muſcles) is the *Semimembranoſus*, which takes its Beginning from the Knob of the *Coxendix*, as the other, and running down the back Part of the Thigh, is inſerted into that Part of the Leg-bone, which in Man is call'd the Ham.

The third is call'd by the ſaid Author *Seminervoſus*, being partly nervous and partly fleſhy, as the other is partly fleſhy and partly membranous. It has the ſame Origin with the other two; but deſcending obliquely towards the inner Part of the Thigh, it reaches to the Middle of the Leg-bone, into whoſe inner Part it is inſerted.

The fourth is call'd *Gracilis*, being ſlender; it ariſes with a nervous Beginning, from the Middle of the Share-bone, and deſcending along the Inſide of the Thigh, is inſerted near the other. When theſe Muſcles act together, they draw the Leg directly backward; but when they act ſingly, ſome being placed more outward, and ſome more inward, they then bend the Leg either to this or that Side.

Moved obliquely by one.

But beſides theſe, there is another call'd *Poglitæus*, which moves the Leg obliquely. This riſes broad and nervous from the outer Head of the Thigh-bone, and going obliquely down the Thigh, is inſerted in the back Part of the upper Knob of the *Tibia*.

We come now to the Muſcles which move the lower Part of the Leg and Foot; and here it will be neceſſary to take Notice, that by the lower Part of the Leg is to be underſtood, that Space which reaches from the Hock to the great Paſtern; which, Mr. *Snape* ſays, is anſwerable to the Inſtep in Men, as the great Paſtern, and little Paſtern, anſwer to the firſt and ſecond Joints of the Toes; and the Coffin-Joint to that whereon the Nails do grow.

The Inſtep bended by the Muſcles.

The Inſtep is bended by two Muſcles, to wit, the *Tibiæus Anticus*, and *Peronæus Anticus*. The firſt ariſes ſharp and fleſhy from the upper Appendix of the Leg-bone, cleaving cloſe to it in its Deſcent, and paſſing under the Griſtle of the Hock, is divided into two or more Tendons, that are inſerted into the Foreſide of the Inſtep-bone, which, with the reſt of the Foot, it moves forward and upward.

The

The ſecond is called *Peronæus Anticus*, tho' improperly in a Horſe, who wants that Bone which in Man is named *Perone*, or *Fibula*. This takes its Origin from the upper Appendix of the *Tibia* or Leg-bone, and is inſerted into the Outſide of the Inſtep-bone, which with the reſt of the Foot it moves forward and ſomewhat outward.

The Foot extended by three Muſcles.

The Foot is alſo extended or drawn backwards by three Muſcles, the firſt is called *Gaſtrocnemius Externus*; and is that Muſcle which in Man forms the Calf of the Leg. It takes its Riſe from the inner Head of the Thigh-bone, and Part of it from the outward Head of the ſame Bone, and afterwards uniting together about the Middle of the Leg, they there turn into one ſtrong Tendon, which being united with that of the following Muſcle, to wit, the *Gaſtrocnemius internus*, are both inſerted into the Heel-bone.

This Muſcle lieth ſomewhat under the former, ariſing from the hinder Part of the upper End of the Leg-bone, and is inſerted as aforeſaid.

The laſt Extender of the Foot is called *Plantaris*, or the Muſcle of the Soal or Tread; it ariſes fleſhy, round, and ſlender, between the former two, taking its Origin from the back Part of the lower Head of the Thigh-bone, and in its Deſcent ſoon becomes a ſlender round Tendon; which, joining very cloſely with the Tendons of the former two, paſſes down to the Heel-bone, where it leaves them, and proceeds along the back Part of the Inſtep-bone, and the two Paſterns, terminating within the Foot all over the Bottom of it, making that Part of the Foot which lies next under the Soal, and plainly appears when the Soal is drawn out. The Tendons of theſe three Muſcles joining together, form that great Sinew called *Magna Chorda*, by which the *Butchers* hang up their Meat.

Moved ſideways by two Muſcle..

The Foot is alſo moved ſomewhat ſideways, to wit, inward and outward, by two Muſcles.

The firſt is called *Tibialis Poſticus*, having its Origin from the upper End of the Leg-bone, and its Uſe being to move the Foot obliquely inward.

The ſecond, called *Peronæus Poſticus*, ariſes from the upper and hinder Part of the Leg-bone, by a nervous and ſtrong Beginning, and deſcending with the Tendon of the *Peronæus Anticus*, on the Outſide of the Hock, continuing its Courſe beyond it to the Bottom of the Foot, into which

it

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Harness Maker

Wickham.

TAB. VI.

it is implanted. This moves the Foot contrary to the former, *viz.* obliquely outward.

The Paſterns and Coffin-Joint are likewiſe bended, and extended by their proper Muſcles.

The Benders are in Number two, *viz.* the *Flexor longus*, and *Flexor brevis*. The firſt ariſes from the upper and hinder Part of the Leg-bone, and deſcends on the inner Side of the Hoof, down the Inſtep-bone and Paſterns, into the Coffin-Joint. The ſecond takes its Origin from the Inſide of the Heel-bone, a little below the Hock, and has the ſame Inſertion with the former. Theſe bend the Paſterns and Coffin-Joint backward. *The Paſterns bended by two.*

The Extenders are alſo two, the firſt called *Extenſor longus*, and the other *Extenſor brevis*: The one riſing from the inner Side of the Shank, juſt under the Stifle, is inſerted into the fore and upper Part of the Coffin-Joint. The other riſing from the fore-part of the *Annular Ligament*, that binds about the Inſtep-Joint, and deſcending under the former, has the ſame Inſertion. Theſe two extend the Paſterns and Coffin-Joint, by drawing them forward. *And extended by two.*

TAB. VI. Repreſents the hind Part of a Horſe, with his Muſcles.

AA. *The* Cucullaris, or *Monk's Hood.*
B. *The Edge of the* Deltoides *of the Thigh.*
C. *The* Glutæus Minor, *or leſſer Buttock Muſcles.*
DDD. *The* Glutæus Medius.
EE. *The* Glutæus Major, *or greater Buttock Muſcle.*
F. *The* Biceps.
GG. *The* Seminervoſus *of both Legs.*
HHH. *The* Lividus, or *Pectinals of both hind Legs.*
I. *The* Semimembranoſus.
K. *The* Orbicularis, *or orbicular Muſcle of the Lips.*
L. *Part of the* Longiſſimus Dorſi.
M. *The circular Muſcle of the Noſe.*
N. *The Sphincter of the Fundament.*
O. *The* Maſtoides.
P. *The* Manſorius *of the Cheeks.*
Q. *The* Triangularis.
R. *The* Complexus, *or* Trigeminus.
S. *The* Tranſverſalis Colli.

T. *The*

T. *The* Spinatus Colli.
V. *The* Vaſtus Externus.
WW. *The* Gaſtrocnemius Externus.
X. *The* Peronæus Anticus.
Y. *The* Peronæus Poſticus.

CHAP. VI.

Of the Bones.

§. I. *Of the Bones which frame and compoſe the Skull, with its* Suture.

The Skull. THE firſt and uppermoſt Part of the Head is the Skull, call'd by Anatomiſts the *Cranium*, from its Office of covering the Brain like a Helmet. It is compoſed of nine Bones, three of which are common to it, and the upper Jaw; which are the Wedge-like Bone, the *Os Jugale*, or the Yoke-like Bone, and the *Os Cribriforme*, or Sieve-like Bone. The other ſix are proper Bones, and make up the Skull itſelf; and theſe are the *Frontal*, or Forehead-bone, the *Occipital*, or Noll-bone, the two Bones of the *Sinciput*, or *Parietal*-bones, and the Temple-bones, within which are contain'd the ſmall Bones of the Ear, which, with the two *Orbicular*-bones, make up the Number of ſeventeen Bones peculiar to the Skull.

Its Bones proper and common.

Its Sutures, *or Seams.* The larger Bones are diſtinguiſh'd by ſeveral Seams, call'd *Sutures*, both which and the Bones are of the ſame Number in a Horſe as in Men, only that they are different in Shape and Figure.

Some of theſe *Sutures* are proper to the Skull alone, and ſome are common to it and the upper Jaw. They are alſo diſtinguiſh'd into thoſe that are true, and thoſe that are falſe; ſuch as are indented one into another, being of the firſt kind; and ſuch as are plain and linear, like two Boards glued together, being accounted of the ſecond kind, or only falſe *Sutures*.

Its true Sutures. The true *Sutures*, are three in Number, and proper to the Skull only, *viz.* the *Coronal*, *Lambdoidal*, and *Sagittal*.

The

The *Coronal*, ſo called becauſe the Ancients were wont to wear their Crowns or Garlands on that Part. The Suture, as in Men, ſo likewiſe in a Horſe, runs athwart the Skull above the Forehead, reaching on each Side to the Temple-bones, and joining the Forehead-bone to the *Sinciput*.

The ſecond, *Lambdoides*, becauſe of its Reſemblance to the *Greek* Letter Λ. This is ſeated on the hind Part of the Head, being oppoſite to the other, beginning at the Bottom of the *Occiput*, and deſcending above the Ear ſomewhat higher than in Men. It joins the Bone of the *Occiput*, or hind and under Part of the Skull, to the Bones of the *Sinciput* and Temples.

The third begins at the Middle of the *Lambdoidal* Suture, dividing the two Bones of the *Sinciput*, and is therefore called the *Sagittal* Suture; but in Horſes, and many other Quadrupeds, it croſſes the *Coronal* Suture, as in Children, quite down to the Noſe. This Suture in a Horſe is not ſo much indent as the other two, but is in a great Meaſure ſtreight and linear.

Its falſe Sutures.

The falſe Sutures are in Number two; the firſt paſſes from the Root of the *Proceſſus Mammillaris* with a circular Duct, returning down again towards the Ear, encompaſſing the Temple-bone.

The ſecond runs obliquely downwards, ariſing from the Top of the former, and paſſes to the Socket of the Eye, and the Beginning of the firſt common Suture.

Thoſe common to the Skull and upper Jaw.

The Sutures, which are common to the Skull, the Wedge-like Bone, and upper Jaw, are chiefly theſe three that follow, to wit, the *Frontal*, the *Wedge-like* Suture, and the *Cribroſa*: The firſt being that by which the Proceſs of the Forehead-bone is join'd with the firſt Bone of the upper Jaw; the ſecond that by which the Wedge-like Bone is join'd with the firſt Bone of the ſame Jaw; and the third that Suture which is common to the Wedge-like Bone and the *Septum*, or Partition of the Noſe.

Their Uſe.

The Sutures are of Uſe, not only as they divide the Bones which compoſe the Skull, but alſo as they afford a free Ingreſs and Egreſs for the Veſſels which ſupply Life and Nouriſhment to the Parts contained within the Skull, and likewiſe as they give a Paſſage to thoſe little Fibres, by which the *Dura Mater* is kept ſuſpended: And further, they are of Uſe in Caſe the Skull ſhould at any time happen to be broke, that any ſuch Fracture or Fiſſure might

might not run through the whole Skull, but be ſtop'd at the end of the fractured Bone; whereas if it was not for theſe Seams, it might with one Blow be ſhivered all in pieces like an earthen Pot. But I ſhall now return to the Bones.

The Frontal Bone, with its Cavities, &c.

The *Frontal* or Forehead Bone, which I have already taken Notice of, as the firſt proper Bone of the Skull, is ſeated before, and makes the fore-part of the Skull. It is bounded on its fore-part by the Coronal and firſt common Suture, on the Sides by the Temporal Bones, and on its inſide by the *Oſſa Spongioſa*, or ſpongy Bones. Between its *Lamina* or Plates, there is a double Cavity, from whence there is alſo a double Paſſage into the Noſtrils, diſtinguiſhed by many bony Fibres, and ſmall Scales, which are encompaſſed with a green Membrane, and contain a ſoft, medullar, or rather oily Subſtance. Theſe are proportionably larger in a Horſe than in a Man, and have various Uſes aſcribed to them, being thought by ſome to aſſiſt in the Office of Smelling, by intangling the odoriferous Air; by ſome, to promote the Shrilneſs of the Voice; and by others, to be a Receptacle for ſome Portion of the excrementitious Matter, which is ſeparated from thoſe Parts.

Beſides theſe Cavities, there is a *Sinus* or Den on each Side, called the *Frontal Sinus's*, compos'd of a double Scale; one making the upper part of the Orbit of the Eye, and the other forming the Cavity above the Eyes, on either Side, which is not very plain, having only Inſcriptions anſwerable to the winding Convolutions of the Brain. This Bone has alſo two Holes, which go to the Orbit of the Eye, whereby the firſt Branch of the Nerve of the fifth Conjugation goeth to the Muſcles of the Forehead. It has likewiſe four Proceſſes, two of which are ſeated at the greater Corner of the Eye, and the other two at its leſſer Corner, helping to form the upper part of the Orbit.

The Sinciput.

The Bones of the *Sinciput* are next to the Frontal, being joined to it by the *Coronal* Suture, and behind to the *Occipital* Bone by the *Lambdoidal* Suture, on each ſide, to the Temple-Bones, by the *Suturæ Squammoſæ*, or ſcaly Sutures, and by one of the common Sutures to the Wedge-like Bone. They are alſo joined one to the other, by the *Sagittal*, or Arrow-like Suture.

Their Figure is ſomewhat Square, and though their Subſtance is thinner than that of the other Bones of the Skull, yet they are alſo made up of two *Laminæ*, excepting where they

they are joined to the Temple-bones. They are ſmooth on their Outſide, but inwardly uneven, having ſeveral Cavities to which the *Dura Mater* adheres, by the Sides of the *Sagittal* Suture; as alſo ſeveral long and winding Inſcriptions, or Furrows, form'd by the Branches of the *Internal Jugulars*, in their Paſſage to the Brain. Theſe Bones have alſo ſeveral Perforations; ſome of which go quite through, others piercing only the upper Table, for the Entrance of thoſe Veſſels which run between its Plates.

The Noll-bone, with its Parts.

The *Occipital*, or Noll-bone, which makes the hinder and lower Part of the Head and middle of the Baſis of the Skull, is the hardeſt of all the Bones of the Skull, excepting the *Os Petroſum* of the Temple-bones, being very thick at Bottom, where the two *Sinus's* of the *Dura Mater* are joined. At the Sides of the great Perforation, through which the Spinal Marrow deſcends, it is ſomewhat thin; but that its thinneſs might be no Prejudice to it, it is ſtrengthen'd by a large Prominence, which aſcends from the ſaid Perforation quite to its upper Part. By this Prominence the two Protuberances of the *Cerebellum* are alſo diſtinguiſhed.

This Bone is in a Horſe five-corner'd, and has ſeveral Channels, or *Sinus's*, two of which, being pretty large, receive the Protuberances or Bunchings of the *Cerebellum*, or After-brain; others receive ſome of the Convolutions of the Brain itſelf, and ſome, the two *Sinus's* of the *Dura Mater*, that they might not be compreſſed or hurt for want of a proper Cavity to lie in.

It has alſo divers Proceſſes, four of which, being covered with a ſmooth Griſtle, are received into the *Sinus's* of the firſt *Vertebra* of the Neck; but that which goes between the Protuberances of the *Cerebellum*, is the moſt conſiderable. It is perforated in five Places, for the Paſſage of ſeveral Veſſels, beſides the large Hole through which the *Medulla* goes into the Spine of the Neck.

The Temple-bones, with their Proceſſes *and* Sinus's.

The laſt of the proper Bones of the Skull, are the Temple-bones, which are ſeated on each Side of the Head, reaching to the bottom of the Ears. Their Figure is on their upper Sides ſemicircular, but below they are rugged and unequal, like a Rock; from whence, and from their hardneſs, the Temple-bone has alſo obtained the Name of *Os Petroſum*. Theſe Bones are very thick at their bottom,

but grow extremely thin upwards, lying like two Scales on the lower Edge of the Bones of the *Sinciput*.

They have each of them two *Sinus's*, the outermoſt being the largeſt, is lined with a Griſtle, and receives the longer Proceſs of the lower Jaw. The other, or inward Cavity, is common to the Temple-bone, and Noll-bone. There are alſo four Proceſſes belonging to each Temple-bone, *viz.* that which in Man is called the *Proceſſus Styloides*, or Pen-like Proceſs, though improperly in a Horſe, it being but ſhort. The next is called the *Proceſſus Mammillaris*, being ſomewhat ſhap'd like a Nipple. The third paſſing forwards from the Hole of the Ear to the Protuberance of the firſt Bone of the upper Jaw, and being joined to the laſt, forms the *Os Jugale*, or Yoke-bone. The fourth is the *Proceſſus Petroſus*, or hard and uneven Part of the Temple-bone; this, being Internal, jets out a pretty way into the Inſide of the bottom of the Skull, within which there are two Perforations; one to give a Paſſage for an Artery, another for the Auditory Nerve, into the inner Cavities of the Ear, to wit, the *Tympanum*, *Labyrinth*, and *Cochlea*.

This Proceſs has alſo on its outſide three Perforations, or Holes; the firſt called the *Meatus Auditorius*, or Auditory Paſſage: The ſecond is that thro' which the *Jugular* Vein enters into the inner Cavities: The third is ſeated between the *Mammillary* and *Styloid* Proceſſes, ending in that Paſſage that goes from the Ear to the Mouth. As to the little Bones that are contained in the Cavities of this Proceſs, *viz.* the *Incus*, *Malleus*, *Stapes*, and *Os Orbiculare*, which, with thoſe already deſcrib'd, make up the whole Number of the Bones proper to the Skull; having taken notice of them already in another Place, I ſhall therefore paſs on to thoſe which are common to the Skull and upper Jaw; and theſe are in number three, namely, the *Os Sphenoides*, or *Wedge-like* Bone, the Sieve-like Bone, and the Yoke-like Bone.

The Wedge-like Bone.

The *Wedge-like* Bone is ſo called from its being placed like a Wedge between the Bones of the Skull and the upper Jaw; it is joined before to the *Frontal-bone*, and behind to the *Occipital*, its Sides to part of the *Petroſum* above, and below to ſome of the Bones of the upper Jaw and Palate.

It has ſeveral Proceſſes, ſome external, and ſome internal; as alſo divers Cavities, two of which are common to it and the Temple-bones, and the Bones of the *Sinciput*. Its Holes are about ſeven on each Side; one of which gives a Paſſage

to

to the *Optick* Nerve, the reſt are penetrated, ſome by one, and ſome by ſeveral Parts of Nerves; others by the *Carotid* Arteries and *Jugular* Veins; and again, others both by Nerves and Blood-veſſels.

The Os Cribriforme, *or Sieve-like Bone.*

The *Os Cribriforme* is the next Bone common to the Head and upper Jaw, and is ſo called from its innumerable little Holes, which make it like a Sieve. It is ſituated in the fore and under Side of the Skull, between and a little below the Sockets of the Eyes, and at the upper Part of the Noſtrils, and is joined by an even Line to the Forehead bone, the ſecond of the upper Jaw, and the Wedge-like Bone.

It is made of four Parts, *viz.* the *Criſta Galli*, or Cock's Comb, to whoſe ſharp *Appendix* the *Falx* adheres. The ſecond Part is that which is perforated, and makes up the greateſt Portion of it. The third is only a Proceſs of its under Side, by which the Noſtrils are divided: And the fourth is called the *Os Spongioſum*; its Cavities being filled with a ſpongy ſort of Fleſh. This Bone helps to make up the Corner of the Orbit of the Eye, and through its Holes gives a Paſſage to the innumerable *Fibrillæ* of the Auditory Nerves.

Os Jugale.

The laſt is the *Jugale* or Yoke-like Bone, and is compoſed of two Bones; one of which is a Proceſs of the Temple-bone, and the other a Proceſs of the firſt Bone of the upper Jaw, forming the lower Side of the leſſer and outer Corner of the Orbit of the Eye.

§. II. *Of the Jaw-bones and Teeth, together with the* Os Hyoides, *or Bone of the Tongue.*

Twelve Bones proper to the upper Jaw, viz.

Beſides the Bones which are common to the Skull and upper Jaw, there are twelve, *viz.* ſix on each Side, which are proper to the upper Jaw alone, and are thoſe which frame the lower Side of the Orbit of the Eye, the Noſe, Cheeks, and Roof of the Mouth.

The firſt, Zygomaticum, with its fellow.

The firſt is called *Zygomaticum*, becauſe its Proceſs makes up a Part of the *Os jugale*: It compoſes the lower Part of the outer Corner of the Eye.

The ſecond, Lachrymale.

The next is ſeated in the inner Corner of the Orbit of the Eye, and is called *Lachrymale*, becauſe it has in it a Cavity which contains the *Lachrymal* Gland. This Bone has alſo a Perfora-

tion into the Noſtril, through which a Nerve of the fifth Pair paſſes to the inner Membrane of the Noſe.

The Third. The third is ſeated in the inner Side of the Orbit of the Eye, and is continued with the fungous Bones of the Noſtrils. This Bone is joined to four Bones, *viz.* to the Forehead-bone, to the Wedge-like Bone, to the laſt deſcribed, and the next following, and is not diſtinguiſhed by any peculiar Name.

The fourth, Os Malæ. The fourth is called the *Os Malæ*, or Cheek-bone. This Bone compoſes the greateſt Part of the Cheek, as alſo of the Palate; and moreover contains all the upper Teeth in its leſſer Caverns. It is much the largeſt of all the Bones of the upper Jaw, and is circumſcribed with divers Sutures, being joined above to the Frontal-bone on the Side next the Noſe, below to the Wedge-like Bone, and the Bone of the Palate of the Mouth, before to the *Lachrymal* Bone, and one of thoſe Bones that make the upper Part of the Noſe, as alſo to the Cheek-bone on the other Side. It has alſo three Perforations, two of which are under the Orbit of the Eye, for the Paſſage of two Branches of the Nerves that are beſtowed on the Face; and the third, for the Paſſage of a Vein and Artery, which go to the Noſtrils. This Bone has likewiſe a great Den or Cavern on each Side, in that prominent Part which ſtands out under the Orbit of the Eye, and on each Side of the Noſe; when there happens to be Matter pent up in this Cavity, it occaſions intollerable Pain, by reaſon of a very fine and ſenſible Membrane, which lines its Inſide.

The fifth, which makes the Prominence of the Noſe. The fifth Bone of the upper Jaw, with its Companion, makes up the bony Prominence of the Noſe. It is hard and ſolid, and is perforated in ſeveral Places, for the Paſſage of Nerves and Blood Veſſels. It is joined above to the internal Proceſs of the Frontal Bone: Its Sides adhere to the firſt and fourth Bone of this Jaw, in the Middle to its Companion, and underneath to the Griſtles that make the lower Part of the Noſe.

The laſt, with its Companion, frame the Roof of the Mouth. The laſt is that Bone which with its Companion, frames the Roof of the Mouth: It is broad, thin, and ſolid, but ſomewhat rough and uneven at that End where it reſembles a Semi-circle. It is joined behind to the Wing-like Proceſſes of the Wedge-like Bone; and on the Inſide to the Partition of the Noſtrils. It is alſo joined to the Cheek-

bone,

bone, and to its back Part. It has likewiſe two Perforations, one on either Side, which have Communication with the two Holes of the Wedge-like Bone.

The lower Jaw, which makes the lower Part of the Capacity of the Mouth, comes next to be treated of. This differs from the former, in that it is moveable, whereas the other is not. At both Ends of it there are two Proceſſes, the foremoſt of which running upwards, and from a broad Baſis growing ſharp, ends in a Cone or Point. It is this Point that receives the Tendon of the Temporal Muſcle; from whence it is, that a Luxation of the lower Jaw is very dangerous, if not ſpeedily reduc'd. *The lower Jaw with its Parts.*

The other, which is the backward Proceſs, is call'd *Articularis*, having a Neck and a longiſh Head covered with a Griſtle, by which it is receiv'd and articulated into the *Sinus* of the *Os petroſum*, and it is ſtrongly knit thereto by a membranous Ligament. It hath, at the Sides of thoſe Proceſſes, ſmall ſhallow Cavities, for the Lodgment of its Muſcles. Towards its back Part it hath a Cavity within it, which contains a marrowy Juice for its Nouriſhment. It has alſo four Perforations or Holes, whereof two are at the Roots of the Proceſſes, by which a Vein and Artery, as alſo a Branch of the fifth Pair of Nerves do paſs to the Teeth. The other two are in its Fore-part, giving Way to two Twigs of the ſaid Branch, which go out to the lower Lip.

But the lower and upper Jaw have Sockets for the Teeth to ſtand in, which by reaſon of their Depth, have been called *Alveoli*: When any of the Teeth fall out, as the *Foal Teeth*, &c. theſe Pits ſoon become obliterated, and the Jaw grows ſmooth.

The Teeth are of a Subſtance harder than any of the other Bones, which is abſolutely neceſſary, conſidering their Office is to break and cut all the Aliment. That Part of them which ſtands out above the Gums, is ſmooth and free from any Covering, but all within the Sockets of the Jaws is more rough, and covered with a thin Membrane of exquiſite Senſe. Thoſe which are called *Grinders*, have a manifeſt Cavity within them, but the Fore-teeth and Dog-teeth have but very obſcure ones. By the ſmall Holes which are diſcernable in the Roots of the Teeth, is conveyed into theſe Cavities a capillary Branch of an Artery from the *Carotids*, a ſmall Vein from the *Jugulars*, and a Twig of a Nerve from the fifth Pair, which being expanded through the thin Membrane *The Teeth.*

that inveſts the ſaid Cavity, is partly the Occaſion of that exquiſite Pain which is felt in the Tooth-ach. Theſe Veſſels before-mention'd, namely, the Vein, Artery, and Nerve, are incloſed in one common *Capſula*, or Sheath, when they enter the Jaw, and running along a proper Channel under the Roots of the Teeth, ſend off to each of them, in their Paſſage, thoſe ſmall Twigs aforeſaid.

Though the Teeth of Horſes are differently ſituated from thoſe in Men, and are alſo more numerous, yet as to their Offices, they admit of the ſame Diviſion, and are of three Kinds; namely, the *Inciſores*, *Canini*, and *Molares*.

The Inciſores. The *Inciſores*, Cutters or Shredders, are thoſe we call the Fore-teeth, being ſeated in the Fore-part of the Jaw. They are broad and ſharp-edged, the better to crop and bite off the Graſs: They are in Number twelve, ſix on each Jaw. Theſe have but one Root or Fang.

The Canini. The next are the *Canini*, or Dog-teeth, which in Horſes are called the *Tuſhes*; and are of Uſe to break whatever is too hard for the Fore-teeth to cut or ſhear aſunder. Theſe have alſo but one Fang, and are ſeldom to be found in Mares.

The Molares. Thoſe of the third Rank are the double Teeth, and are named *Molares* or Grinders, becauſe they grind the Food like a Milſtone: They are in Number twenty-four, twelve on each Jaw; their Seat is in the inner Part of the Mouth, being inviroined on their Outſide by the Cheeks, to prevent the Food falling out of the Mouth while it is a grinding. Theſe have ſeveral Aſperities on their upper Part, by which Means they are render'd more fit for their peculiar Uſe.

Thoſe by which the Age of a Horſe is known. The two foremoſt of theſe Teeth, which ſtand next the Tuſhes, are thoſe by which a Horſe may be known to be under ſeven Years old, having till then ſeveral thin Shells, or Scales growing round the outſide of the Top of them, forming a hollow in the Middle. And it is to be obſerved, that the nearer a Horſe comes to that Age, the more thoſe Edges are worn down, till at laſt they become even with the reſt; ſo that the Age of a Horſe is no more to be known by that Sign.

The ſeveral Periods of a Horſe's Age, while only a Colt, are alſo diſtinguiſhable by the Fore-teeth; but theſe Things being ſufficiently known by every one who has been uſed among Horſes, I ſhall therefore proceed to the Bone of the Tongue.

That

That Bone is called *Hyoides*, from its ſhape, being like the *Greek* Letter υ (*Ypſilon*). It is ſeated at the Root of the Tongue, being the Foundation or Supporter of it. It is made up of three Bones, the middlemoſt being gibbous outwards, but inwards ſomewhat hollow: The other two are call'd its *Cornua*, or Horns, and are all ty'd to the adjacent Parts by a Subſtance which is partly nervous, and partly fleſhy. *The* Os Hyoides, *or Bone of the Tongue.*

This little Bone is of great uſe; all the Muſcles that move the Tongue being either inſerted into it, or taking their Origin from it. It alſo gives Riſe to ſome of thoſe Muſcles that move the *Larynx*, or Throttle, and is a reſting Place to the *Epiglottis*, or Throat-flap, when it is lifted up in Breathing.

§. III. *Of the* Vertebræ *of the Neck.*

The Neck is made up of ſeven *Vertebræ*, or Rack-bones, reckoning from the Head downward, that next the Head being the firſt; they have each of them a large Cavity, to give way to the Spinal Marrow: And beſides this large Hole, which they have in common with all the other *Vertebræ*, they have each two ſmall Perforations in their *tranſverſe* Proceſſes, thro' which the cervical Veins and Arteries do paſs to the Head; and between their Joinings there is a third found, partly out of the lower Side of the upper *Vertebra*, and partly out of the upper Side of each lower *Vertebra*, by which the Nerves paſs outward from the Spinal Marrow. *The* Vertebræ *of the Neck.*

The firſt of theſe Bones, in a human Skeleton, is called *Atlas*, becauſe the Head is articulated to it, and, as it were, ſupported by it; and may therefore retain the ſame Name in a Horſe. Its Body is ſlender, but more Solid than the Tips of its Proceſſes, which are porous and open; inſtead of its hinder Spine or Proceſs, it has only a ſemicircular Prominence jetting out, leſt the larger ſtreight Pair of Muſcles, which paſs over it, ſhould be hurt in bending the Head forwards; but it has all its other Proceſſes in common with the reſt. On the fore-ſide of its great *Foramen* inwards, it has a ſmall Socket ſomewhat Semicircular, and lin'd with a Cartilage, to receive the Tooth-like Proceſs of the ſecond *Vertebra*. *The firſt is called the* Atlas.

The ſecond *Vertebra* is becauſe of this Proceſs called *Dentata*; it is an Appendix, *The ſecond,* Dentata.

which ſprings from between its two deſcending Proceſſes, long and round, its Head reſembling the upper Part of the Dog-tooth in Man, or the Tuſh in a Horſe. It is alſo covered with a Cartilage on that Part which is received into the foreſaid *Sinus* of the firſt *Vertebra*; upon it the Head turns round, as upon a Hinge. The Baſis of this Tooth-like Appendage is encompaſſed with a Ligament that knits it to the *Occiput*. This and the following *Vertebræ* have Spines, or hinder Proceſſes, each of which are divided into two, for the better Connexion of the Ligaments and Muſcles to them; and are, in every Reſpect, like the ſecond, ſave only that their lateral Proceſſes are larger, and divided as well as the hinder.

§. IV. *Of the* Vertebræ *of the Back and Loins, as alſo of the Breaſt-bone, Collar-bones, and Ribs.*

Thoſe of the Back and Loins. The Back is made up of ſeventeen *Vertebræ*, or Rack-bones, which are ſomewhat different, both in their Bodies and Proceſſes, from thoſe of the Neck, the laſt being longer and more flat on their Inſide, that the Gullet might reſt more ſecurely on them; and as for their Proceſſes, though they are equal in Number, *viz.* two tending obliquely upwards, and two tending obliquely downwards, two tranſverſe, or lateral ones, and one acute hinder one, called the *Spine*; yet thoſe which are now to be deſcribed, have their Spines, or hinder Proceſſes ſingle, and not divided, and their lateral ones more ſhort and blunt; and inſtead of the Holes which are in thoſe of the Neck, have only a ſhallow Cavity, into which the Ribs are articulated.

Neither are the Bodies of theſe *Vertebræ* of ſuch a firm and ſolid Make as thoſe of the Neck, tho' they are more bulky; beſides that they are full of ſmall Perforations, for the Admiſſion of Blood-veſſels to the Spinal Marrow, and have each two Holes at their Joinings, for the Egreſs of the Nerves which proceed from thence.

They have alſo on each Side a *Sinus*, or Cavity, for the Inarticulation of the Head of the Rib, which *Sinus's* are wanting in thoſe of the Neck, having no Communication with any other but among themſelves.

The tranſverſe Proceſſes of two or three of the loweſt of theſe Rack-bones grow gradually ſhorter, and their Spines more blunt and even, declining not ſo much downwards

wards as thoſe more forwards. As for the great Perforation in their Middle, it is proportionable to their Size, and the Marrow contained within it.

The *Vertebræ* of the Loins, which compoſe the third Part of the Spine, come next to be conſidered. They are in Number ſeven; and are bigger than any of the foregoing; their hind Proceſſes, or Spines, grow ſhorter, but are broader and thicker than thoſe of the Back, ſomewhat bending upwards, as moſt of the other decline downwards; but as to their internal Proceſſes, they exceed thoſe of the Back in Length: They are joined one to another by a clammy Griſtle, as alſo the uppermoſt of them to the laſt of the Back, and the loweſt to the firſt of the *Os Sacrum*, by the ſame Kind of Articulation. Theſe have alſo ſeveral Perforations, for the Ingreſs and Egreſs of Nerves and Blood-veſſels, as alſo a large Cavity in each for the Spinal Marrow.

The Sternum *or Breaſt-bone.*

Directly oppoſite to the upper *Vertebræ* of the Back, is ſeated the *Sternum* or Breaſt-bone, which is very different in a Horſe from what it is in a Man, being, in all human Skeletons, flat in its Outſide, and pretty ſtreight; whereas in our preſent Subject, it is not only ſomewhat arched, but in its Middle is prominent and ſharp, like the Keel of a Ship, being alſo hollow on its Inſide. This Bone in Foals, as in Children, ſeems to be made up of divers Cartilages, which in Time become ſo united, as to leave no Marks of their ever having been divided.

In its upper Part it is pointed and ſharp, whereas its lower Part is ſomewhat blunt and obtuſe, terminating in a Griſtle, called the *Cartilago Enſiformis*, or Sword-like Griſtle. Its Uſe is to ſerve as a Safeguard to the Breaſt, as alſo for the Articulation of the Collar-bones; and the nine uppermoſt Ribs having on each Side nine little *Sinus's*, or Cavities, for that Purpoſe.

The Claviculæ, *or Collar-bones.*

The Collar-bones, which are the firſt that are united to the Breaſt-bone, are in Number two, one on each Side; they are called *Claviculæ*; either becauſe they reſemble the ancient Keys, which were in Shape like an *Italian ſ*, or becauſe they lock up and cloſe the Cheſt: Their Heads are ſpongy and open, but their Middle ſomewhat thin and flat, and ſomewhat more ſolid; by one End they are joined to the Top of the Breaſt-bone, and by the other to the firſt Rack-bone of the Back, differing

fering from thoſe in Man, which are joined with the Shoulder. They help to ſupport the Shoulder-blades, and keep them from ſliding forward upon the Breaſt-bone and Shoulder-bones, which, upon a Fracture, or Diſlocation of theſe Bones, frequently happens.

The Ribs. Next the Collar-bones are ſeated the Ribs. They are in all thirty-four, *viz.* ſeventeen on each Side. Their Subſtance is partly bony, and partly cartilaginous. The nine uppermoſt are called the true Ribs, becauſe each, with its fellow, makes a kind of Circle, being joined together by the Mediation of the Rack-bones of the Back behind, and the Breaſt-bone before; each Rib has two Knobs, one of which is receiv'd into the *Sinus* of the Body of the *Vertebra*, and the leſſer Knob into that of the tranverſe Proceſs; they are in like manner joined to the Breaſt-bone, their Cartilages ending in little Heads, which are received into its ſmooth *Sinus's*.

The eight lowermoſt are call'd the Baſtard-ribs, becauſe they don't circumſcribe the Body, as the uppermoſt do, by their twofold Articulation into the Rack-bone, and Breaſt-bone. They are of a more ſoft and pliable Subſtance than the true Ribs, and the nearer they advance towards the Loins, they grow Shorter, leaving an open Space for the Stomach and Guts, which might have eaſily been hurt by them, as often as diſtended with Meat and Water.

They are all rough and uneven on their Outſide, eſpecially towards the Back, that the Ligaments, by which they are tied to the Rack-bones, might take the firmer Hold; but on their Inſide they are ſmooth, and cover'd with the *Pleura*, leſt they ſhould hurt the Lungs, and the other Parts that bear againſt them. They are alſo narrow and thick towards the Back, but broader and flatter towards the Breaſt, and are furrowed on the lower Part of their Inſide, in which ſome Blood-veſſels and a Nerve are conducted. They are a Defence to the Bowels within the Breaſt, and likewiſe to thoſe in the lower Belly.

§. V. *Of the Blade-bone, the Shoulder-bone, and the Bones of the Fore-leg and Foot.*

The Blade-bone. The Blade-bone, or Shoulder-blade, is ſeated like a Target upon the Side of the true Ribs, reaching from the *Vertebræ* of the Back almoſt to the Collar-bone. On its Inſide it is ſomewhat concave

and

and hollow, but arched on its Outside; it is joined to no Bone but by its lower End, where it has a Cap that receives the round Head of the Shoulder-bone: It is however knit to several Parts by the Muscles which are inserted into it, or take their Origin from it. It has three Processes, the first is that Part which forms its Neck; the second is extended along the Middle of its Outside, and is called its Spine. The third is towards its lower and Inside, and from the Resemblance it has to an Anchor, is called *Anchoroides*, or its Anchor-like Process.

It has also about its Neck five Appendages, three of which afford an Original to some Muscles, and from the other two arise the Ligaments by which the Head of the Shoulder-bone is tied into its Cup. Round its Brim there is a thick Gristle, which not only makes its Cavity the deeper, that the Head of the Shoulder-bone, which is joined into it, should not so easily slip out, but also facilitates its Motion.

The Os Humeri, *or Shoulder-bone.*

The Shoulder-bone has two Heads, the uppermost inserted into the Cup of the Blade-bone, and the lowermost joined to the upper Part of the *Cubit* or Leg-bone.

The uppermost Head is large and orbicular, cover'd with a Gristle, and is, at first, only an Appendix to the *Cubit*; but in time becomes a Process of the Bone itself; on the Outside of this orbicular Head there are two lesser Prominences, into which two Ligaments are inserted; and on its Inside there is a Cavity, out of which arises the strong Ligament that ties it into the Cup of the Blade.

The lower Head of this Bone, which in a human Body is articulated with two Bones, *viz.* the *Radius* and *Ulna*, is in a Horse only united to one; yet it is so firmly coupled to that one, that it cannot be easily displaced: for there being three Processes, and two *Sinus's*, between it and the Cubit, they both receive, and are received of each other: And besides these Processes, which serve to its Articulation, there is on each Side one, from whence arise the Muscles which lie on both Sides of the Leg. About its Middle there is a Perforation, by which the Blood-vessels have Recourse to and from the Marrow contained within its large Bore, and are those by which it is nourished.

The Cubit, *or Leg-bone.*

The next Bone, call'd the *Cubit*, or Leg-bone, reaches from the Elbow to the Shank. This Bone has on its hinder and upper Part a notable Pro-

Proceſs, long and round, which enters the larger Cavity of the lower Head of the Shoulder-bone, and makes that bunching out which is uſually called the Elbow: this Proceſs is ſomewhat rough and uneven, partly that the Ligaments that encompaſs the Joint might be the more ſtrongly knit to it, and partly for the Origination and Inſertion of the Muſcles which ſerve to move thoſe Parts, for which Cauſe the Bone is rough at the Root of this Proceſs, as alſo the whole Circumference of the *Sinus*, into which it is inſerted.

The ſeven ſmall Bones ſeated between the Leg-bone and Shank.

Between this and the Shank-bone, there are Ranges of little Bones, one above another, three in the firſt Range, and four in the ſecond, all which are very firmly joined together. Theſe differ one from another in their Magnitude, Forms, and Situation, and are ſaid to be firſt cartilaginous, but that in Proceſs of Time they grow hard and bony. Their Subſtance is ſpongy, as are all thoſe which at firſt are only cartilaginous; of which Kind are the Appendages of Bones, the Breaſt-bone, and the like. They are covered with a Ligament which is partly membranous, and partly cartilaginous, whereby they are ſo compacted, that without dividing the ſaid Ligament, it is hard to diſtinguiſh them one from another, but at firſt View they may be all taken for one Bone.

On their outer Surface they are ſomewhat bunching, but on their Inſide they are hollow. The firſt that is placed on the Inſide of the upper Rank, is ſomewhat longiſh, and curved inwards, articulated with the Cubit-bone, and below with the ſecond of the lower Rank, touching both the third and fourth of the ſame Rank, and joined to the ſecond of its own Rank. The ſecond has a Cavity on its upper Part, which receive an Appendix of the Cubit-bone. The third is join'd above, by a plain Surface, to the ſaid Cubit-bone, and with the ſecond is joined underneath, to the fourth Bone of the lower Rank. The fourth Bone, or firſt of the lower Rank, is round and ſmooth, and is joined above to the Outſide of the lower Part of the firſt Bone, and below to the Shank-bone. The fifth has on its upper Part a large *Sinus*, into which the firſt Bone of the upper Rank is articulated, and another below for Reception of Part of the Head of the Shank-bone. The ſixth is join'd with a plain Superficies on each Side, to the ſeventh, and the foregoing above to the ſecond, and below to the

Shank-

Shank-bone. The ſeventh is joined on its upper End to the third of the upper Rank, and below to the Head of the Shank-bone, and on its Inſide to the foregoing, to wit, the ſixth.

Their Uſe.

Theſe Bones are of Uſe, not only to facilitate the Motion of the Knee, but alſo to ſtrengthen it; for by their convex Outſide, the Joint can never be extended too far the contrary Way, and the Number of the lower Rank exceeding that of the upper Rank, (as the upper End of the Shank-bone is broader than the lower End of the Cubit) and as the Bones themſelves are ſomewhat different in their Size from each other, like a Piece of good Maſon-work, they cannot eaſily be pull'd aſunder; whereas if the Bones of both Ranks were of one Size and Number, and their Seams and Junctures to run ſtreight through, it would be impoſſible but every the leaſt falſe Step muſt diſorder them in ſuch Manner, as to occaſion an irrecoverable Lameneſs. As to their Motion, although by this Sort of Articulation they ſeem as if they were incapable of any ſingly; yet it is very certain, the whole have a ſmall Tendency inward as often as the Shank is bended, though that be ſcarcely diſcernable, and by virtue of the cartilaginous Ligament, which covers all thoſe little Bones, and ties them together, they recover themſelves as with a Spring; ſo that the Motion of that Joint muſt be more eaſy and quick, than it could poſſibly be by any other Kind of Articulation.

But it would oblige me to go beyond the Limits of this ſhort Abridgment, if I ſhould explain the Mechaniſm of the Bones; I ſhall therefore proceed to the Shank-bone, which comes next in Order, and that which reaches from the Knee to the great Paſtern, and anſwers to the Back of the Hand in Man. As that conſiſts of five Bones, the Shank-bone of a Horſe is made up of three, having one much larger and longer than either of the other. It is joined by its upper Part to the lowermoſt Range of the ſmall Bones, and below to the upper End of the great Paſtern, by a reciprocal Articulation, having two round Heads, and three ſmall Cavities, whereby theſe two Bones both receive, and are received into each other, as the lower End of the Shoulder-bone and the upper End of the Cubit.

The Shank-bone.

To each Side of this Bone is faſtened a Splint, in Shape like a Bodkin, being thick and round at the upper End,

but

but ſmall and pointed at the lower; between theſe do run the Tendons of the Muſcles that move the Foot.

The great Paſtern. The next is the great Paſtern. This Bone is gibbous and crooked on its upper Part, where it is articulated with the Shank-bone; it has three ſmall Proceſſes, which are received into the Cavities of the ſaid Shank-bone; and two Cavities, which alſo receive its two Proceſſes, and has alſo two ſmall triangular Bones faſtened to its back Part, whereon the Footlock Hair does grow; theſe two Bones are a Stay to that Joint, which Articulation, being like a Hinge, would be apt to ſtrain the Ligaments every Time a Horſe ſhould ſtumble.

The little Paſtern. The little Paſtern is not much unlike the other, only that it differs in its Length; its upper End is articulated with the great Paſtern, and its lower End conſiſts of two Heads, as that of the great Paſtern, which are received into the Coffin-bone, in the ſame Manner as itſelf receives the lower End of the great Paſtern.

The Coffin-bone. The Coffin-bone, which is the lowermoſt of all the Bones of the Leg, is ſo called from its Hollowneſs. It is ſomewhat ſemilunary, or half-moon faſhion'd, thick upwards, where its Cavities receive the lower End of the little Paſtern; but thin and broad at its Bottom towards its Edges, for its more firm fixing upon the Ground. Its Subſtance is open and porous, having innumerable little Holes through its Sides, for the Paſſage of the Veſſels; as alſo many ſmall *Sinus's*, wherein are inſerted the Tendons of the Muſcles that move the lower Part of the Leg and Foot.

§. VI. *Of the* Croupe, *and Rump-Bone.*

The Os Sacrum, *or* Croupe. The *Croupe*, or the Bone which lies under the Crupper, otherwiſe called the *Os Sacrum*, is ſeated at the lower End of the Back, and adheres to the laſt *Vertebra* of the Loins above, and below to the firſt of the Bones of the *Duct*, or Rump: It is much the broadeſt of all the Bones of the Back, of a Figure ſomewhat triangular, growing from a broad Beginning, narrow towards the firſt Bone of the Tail; it is hollow on its Inſide, but uneven outwards, becauſe of the Muſcles of the Back, and its Ligaments cleaving to it. It has hardly any oblique Proceſſes but on it

its firſt *Vertebra*, and its other Proceſſes are either very ſmall or very obſcure. On each Side, towards its Edges, there are certain *Sinus's* to which the Haunch-bones adhere, by an intervening Cartilage. It has ſix *Vertebræ*, its Spines grow gradually leſs, the nearer they approach the Rump, as the Vertebres themſelves do alſo. The Spinal Marrow has likewiſe a Paſſage in it, as in the other *Vertebræ*, out of which there are ſeveral leſſer Perforations for the Egreſs of the Nerves.

The Rump, or Tail.

The Rump-bones are in number eighteen, and are joined to each other by an intervening Cartilage, or Griſtle; but ſo looſely, that a Horſe can move his Tail which way he pleaſes; theſe have no hollowneſs in them, only the uppermoſt has a ſmall Cavity that receives the Proceſs from the laſt Bone above deſcribed; they are Soft and Spongy, and therefore the better adapted to Motion, as they are alſo from their Make, growing gradually leſs, until they End in a ſmall pointed Cartilage.

§. VII. *Of the* Oſſa Innominata, *divided into the Hip, Haunch, and Share-bones.*

The *Oſſa Innominata* are ſeated on the Sides of the *Os Sacrum*. The firſt is called the *Os Ilium*, becauſe the Gut *Ilium* lies under it; it is the uppermoſt and broadeſt, and is joined with the *Os Sacrum* by a true Suture; it is ſomewhat Semicircular, being convex and uneven on its Outſide, which is called its *Dorſum*, or Back and Concave, and even on its internal Side, which is called its *Coſta*; and that Part by which it is joined to the upper *Vertebræ* of the *Os Sacrum*, is called its *Spine*, or Edge.

Os Ilium.

Its Spine is, in many Places, rough and uneven, there being ſeveral Muſcles that take their Origin from it, as alſo from its *Dorſum*, or back-part, which is in like manner accommodated for the ſame Purpoſe.

The ſecond is called the *Os Pubis*, or Share-bone, which forms the inferior and fore-part of the *Oſſa Innominata*; it is joined to its fellow by an intervening Cartilage, and forms the fore-part of that Cavity, in human Bodies, and is called the *Pelvis*, or Baſon. It is perforated with a very large Hole, and on its inner and hinder Side, has two Proceſſes, from whence the cavernous Bodies of the Yard, and ſome Muſcles, take their Original.

Os Pubis.

The

The Iſchium, *or* Coxendix.

The third is the Inferior and Poſterior, called the *Iſchium*, or *Coxendix*. It has a large Cavity, which receives the Head of the Thigh-bone. This Cavity has its Circumference tipp'd with a Cartilage, call'd its *Supercilium*, or Brow, where there are ſeveral *Sinus's*, or Protuberances, ordained particularly for the Production of Muſcles, and partly for Ligaments.

In all young Animals theſe may be divided into ſeveral Bones; but in ſuch as are Old, the Cartilages, by which they were at firſt only join'd, change their Nature, and become Bony, by which means they grow united, and make but one Bone.

§. VIII. *Of the Bones of the Thighs, Hinder-legs, and Feet.*

The Thigh-bone.

The Thigh-bone is that which reaches from the Hip to the Stifle; it is long and round, and, in ſome Parts, a little convex: Its upper Part is made up of a large Head and Neck, with two Proceſſes, and below it determines into a Head, which has two Productions, with a Cavity between them.

Its upper Head is round, and ſomewhat longiſh, that it may the better fill up the *Acetabulum*, or Cup, which of itſelf is deep, but the more ſo, as it is encompaſs'd with a Cartilage. There is alſo a thin Cartilage which covers the round head of this Bone, that its Motion may be glib and eaſy within the Cup; and becauſe of the great Weight which the Thigh ſuſtains, it is therefore tied by two ſtrong Ligaments, one of which is round, ariſing from the Inſide of the *Acetabulum*, near its bottom, and implanted into a little *Sinus* on the Upper and Fore-part of the ſaid head of the Thigh-bone; and the other, proceeding from the Edge of the *Acetabulum*, by the Aſſiſtance of a membranous Subſtance, incloſes the whole Articulation.

The ſlender Part, under the Head of the Thigh-bone, is called its Neck: It is pretty long and oblique, and is accounted a Proceſs of the Bone. There ariſe, at the lower End of the Neck, two other Proceſſes, which go by the Name of the greater and leſſer *Trochanters*. The uppermoſt, or larger Proceſs, is rough, becauſe of the Inſertion of ſome Muſcles into it. The undermoſt is alſo ſomewhat uneven, eſpecially towards its Root, where the *Vaſtus Internus* riſes. A late Anatomiſt has obſerv'd, that thoſe Protuberances increaſe mightily the Force of the Muſcles,

by

by removing not only their Inſertions, but likewiſe their Directions from the Centre of Motion.

The Thigh-bone below its middle becomes thicker, its lower End terminating in an ample and broad Head: This Head is form'd into two Proceſſes, betwixt which there is a large Space that receives a Protuberance of the Head of the Leg-bone. The Outſide of theſe two Proceſſes is rough, but their Inſide is ſmooth, being covered with a Cartilage, for the more eaſy Motion of the Joint. From them proceed ſome of the Muſcles that move the Leg; and into them are inſerted ſome of thoſe that move the Thigh. Their Sides are full of ſmall Holes, from whence ariſe the Ligaments that ſtrengthen the *Patella*, or Stifle.

In the Middle, between the two Heads, there are two Cavities, the Foremoſt of which receives the Protuberation of the Stifle-bone, being covered with a Griſtle for that purpoſe. The other, which is deeper, is alſo rough and unequal, receives the Protuberation of the Leg-bone. Beſides theſe, there is a Cavity on the outſide of the outer Head, and another on the inſide of the inner Head, thro' both which the Tendons of the ſeveral Muſcles of the Leg deſcend.

The Patella, *or Stifle-pan.*

Where the lower End of the Thigh-bone is joined to the upper End of the Leg bone, on the Fore-ſide is placed a ſmall Bone, ſomewhat round, called the *Patella*, or Stifle-pan; it is plain without, but on its Inſide it is a little convex, having a Ridge which falls between the Juncture of the two Bones; its Inſide is covered with a Griſtle, and its Outſide with the broad Tendons of ſome of thoſe Muſcles that extend the Leg, which keep it firm in its Place, by adhering cloſely to it. This Bone not only ſtrengthens the Articulation of the Thigh and Leg, but alſo ſerves as a Pully for the Tendons of the Muſcles which paſs over it; and facilitate their Action, by removing their Direction from the Centre of Motion.

The Tibia, *or Leg-bone.*

The *Tibia*, or Leg-bone, to which the Thigh-bone is articulated, comes the next to be deſcrib'd. In a Horſe it is very different from what it is in Men, being long and round, and not triangular, as in the latter, its upper Part is much broader and thicker than its lower, and both receives and is received by the Thigh-bone, having two Cavities, and betwixt them a Prominence, which is alſo covered with a Cartilage,

tilage, as all the other Appendages of the Joints are. Within the Cavities of this Joint there is always to be found an unctuous or oily Matter, which is ſeparated to further the Motion thereof, by keeping it moiſt and ſlippery. Its lower Head is round, and likewiſe covered with a Griſtle, to facilitate the Motion of the Inſtep.

This Bone has ſeveral *Sinus's* and Appendages, as well as the Thigh-bone, not only for the Paſſage of the Tendons of ſome Muſcles, but alſo to give riſe to others which move the Foot; and has likewiſe a conſiderable Bore, which reaches from the upper to the lower Appendage, and is filled with Marrow, to keep it moiſt, and preſerve it from becoming too brittle.

The ſmall Bones of the Hock. The Bones of the Hock are in Number the ſame with thoſe in the Knee, and are likewiſe diſpoſed in two Ranks, *viz.* three in the firſt Rank, and four in the undermoſt. They are alſo articulated with the Inſtep, as the others are with the Shank, only that they are ſeated in the bending of the Joint. Theſe Bones are of uſe to hinder a Horſe from falling upon his Hams, when he raiſes himſelf upwards, and goes upon his Haunches; and are alſo like a Spring to that Joint, by which he recovers himſelf in all Actions where the hind Legs are chiefly concern'd.

The Inſtep. The Inſtep-bone, to which theſe ſmall Bones are articulated, is made up of three Bones, which adhere ſo cloſely together, that they can hardly be ſeparated or diſtinguiſh'd, untill the *Perioſteum* is very clean ſcraped off; and are much the ſame as thoſe of the Shank already deſcrib'd. The Paſterns and Coffin-bone, *&c.* agreeing alſo, in every reſpect, with thoſe of the Fore-foot, I ſhall therefore omit mentioning them in this Place. But before I leave this Subject, it will, no doubt, be expected I ſhould take ſome Notice of the Hoofs, they being alſo a hard Subſtance, and a very great Defence to a Horſe's Foot.

The Hoofs. The Hoofs of a Horſe, are thoſe Parts which anſwer to the Nails in human Bodies, and are no other than a Bundle of Huſks, which cover and ſheath the *Papillæ Pyramidales* of the Skin, on the Extremities of the Feet, which dry, harden, and lie cloſe one upon another. They are of a middle Nature, between Bones and Griſtles, that they may not ſplinter and break because of their hardneſs, and at the ſame time be able

to

TAB. VII.

to bear and ſupport ſo great a Burden without much Damage; and are without Senſe, that they may endure Travelling among Stones and rough Ways. They adhere pretty firmly to the Parts included within them, and are faſtened to the Coffin-bone by a Ligament that proceeds from their Root, which is alſo, in ſome Meaſure encompaſſed with the Skin.

Underneath the Hoofs there are many Twigs of Nerves, and Tendons, and Muſcles, which take their Courſe quite to the Soal of the Foot. When theſe are prick'd or bruis'd, they occaſion exquiſite Pain. But of this when we come to treat of the Diſeaſes incident to the Feet.

TABLE VII. Repreſents the Skeleton of a Horſe.

AA. *The Shoulder-blade.*
B. *The Breaſt-bone.*
CC. *The Shoulder-bone.*
DDDD. *The Bones of both fore and hind Legs.*
EEEE. *The ſmall Ranges of Bones, which make the Knee and Hock.*
FF. *The Shank-bones.*
f. f. *The Inſtep-bones.*
GGGG. *The Bodkin-like, or Splint-bones.*
HHHH. *The great Paſterns.*
IIII. *The little Paſterns.*
KKKK. *The Coffin-bones.*
LLLL. *The ſmall Triangular Bones, that adhere to the upper End of the great Paſterns.*
MM. *The* Os Ilium, *or Haunch-bone.*
N. *The* Coxendix, *or Hip-bone.*
OO. *The* Patella, *or Stifle-pan.*
RRR, *&c. The Cartilages at the End of the Ribs.*
SSS, *&c. The ſeventeen Ribs.*
TTT, *&c. That Part of the Ribs where they are articulated into the* Vertebræ *of the Cheſt.*
V. *The* Os Hyoides, *or Bone of the Tongue.*
W. *The lower Jaw.*
X. *The upper Jaw.*
Y. *The Noll-bone.*
From 1 *to* 17, *are the ſeventeen* Vertebræ *of the Cheſt.*
From 1 *to* 7, *the ſeven* Vertebræ *of the Loins.*
From 1 *to* 6, *the ſix Proceſſes of the* Os Sacrum.

From the Cypher 1 *to* 18, *are repreſented the eighteen Bones of the Rump or Dock.*

I, II, III, IV, V, VI, VII. *Shew the Seven* Vertebræ *or Rack-bones of the Neck.*

The APPENDIX.

Concerning the Blood-veſſels, and Circulation of the Blood, &c.

AFTER a ſhort Deſcription of the Parts which compoſe and make up the Body of a Horſe, it cannot be thought unneceſſary to add ſome things in general, concerning the Way and Manner by which an animal Body is ſuſtain'd and nouriſh'd, and thereby render'd fit to perform the ſeveral Functions of Life. I ſhall therefore ſum up this Abridgment with a brief Account of the *Circulation* of the Blood, and its Diſtribution into all Parts of the Body. And in Order thereunto, I ſhall not only ſtudy Brevity, but endeavour to make the Diſcourſe as eaſy and intelligible as poſſible, beginning with the Aliment, and throughout the whole following the Order of Nature; that thoſe who have not had the Opportunities of Study, may reap ſome Benefit by it.

The Chyle.

As ſoon as an Animal gathers in his Food, the Glands of the Mouth pour forth their Liquor, not only that it may be the more eaſily chew'd, but that it may be thereby render'd ſoft and more readily paſs through the Gullet into the Stomach. When it has arrived there, ſeveral Inſtruments become aſſiſtful to Digeſtion. The Juices which flow from the Glands of the Stomach, and the Drink, help to keep it moiſt; ſo that by the continual Action of its Sides, which, by Virtue of its muſcular Fibres, perpetually rub one againſt another, and by the Aſſiſtance of the incloſed Air, all the Parts and Particles of the Food are greatly ſeparated. The groſſer Parts are carried downwards by the Periſtaltick Motion of the Guts, the Preſſure of the Midriff and Muſcles of the lower Belly, and are voided at the Fundament, while the finer Parts conſtitute that white milky Subſtance which we call *Chyle*.

The

The Chyle, being thus prepar'd in the Stomach, paſſes by Degrees out at its lower Orifice into the ſmall Guts, and is by the ſame Powers ſqueez'd into the ſmall and minute Orifices of the *lacteal* or milky Veins; which, as has been obſerved in another Place, ariſe from all Parts of the ſaid Guts, by fine *capillary*, or Hair-like Tubes: And altho' theſe Tubes are ſo ſmall, that they cannot be perceiv'd but in Animals open'd alive immediately after Eating, at which Time they are full of Chyle; yet every one of them imbibe and drink up Part of the refined Aliment; and as they run from the Sides of the Guts to the Glands in the Meſentery, they unite and form larger Branches, and are called the *lacteal Veſſels* of the firſt Kind. Theſe Extremities of the *Lacteals*, having Communication with the ſmall capillary Arteries of the Guts, receive a thin *Lympha*, which not only dilutes the Chyle, and helps to drive it forwards, but alſo waſhes the Lacteals and Kernels, that they may not furr and be ſtopped up by its ſtaying in them upon faſting.

Its Paſſage into the ſmall Guts.

There are other Lacteals which are larger, and are called *Venæ Lacteæ Secundi Generis*, or the Lacteals of the ſecond Kind: Theſe receive the Chyle that was diſcharged by the firſt, into the veſicular Kernels of the Meſentery, and carry it immediately into its common Receptable.

The Lacteals.

The *Lymphaticks*, which ariſe from moſt of the Inteſtines of the lower Belly, and from the lower extreme Parts, empty their Liquor into that Receptacle, which being mixed with it, makes its Parts ſtill more fine, and fit to be united with the Blood; and as the Chyle leaves its Receptable, and aſcends the Thoraick Duct, the other Lymphaticks, which ariſe from the Parts contain'd in the Cheſt, empty themſelves into the Duct, and thoſe which come from the Head, Neck, and Arms, diſcharge their Contents into the Jugular and Subclavian Veins, by which it becomes yet more diluted and perfect, as it enters into the Maſs of Blood.

The Lacteals and Thoraick Duct have Valves, which open for the Paſſage of the Chyle, but ſhut themſelves ſo as to hinder its Return back again; and the Thoraick Duct, being placed behind the great Artery, receives a new *Impetus* by its Pulſation, which alſo forwards the Aſcent of the Chyle.

The Thoraick Duct and Lacteals have Valves, to hinder the Return of the Chyle.

The Lymph-

Ducts contracts themselves at equal Distances, and have also their little Flood-gates, which permit their Liquor to take its Course towards the Chyle-Vessels, but hinder its coming back the same Way; by all which Means the animal Body can never be depriv'd of its Nourishment, but in Case of Sickness or Want.

Its Entrance into the Blood.

The Chyle being prepared in the Stomach and small Guts, as has been observed, and being also further refin'd by the Commixture of the *Lympha*, in its Passage through the Lacteals and Thoraick Duct, is convey'd by that Canal to the left subclavian Vein, where it opens itself at several Orifices, and mixing with the Blood, is carried directly to the right Ventricle of the Heart, and is no farther to be traced under the Name of Chyle, but henceforth becomes a Part of the Blood.

Now, that all the Blood takes a circular Course thro' the Heart, is an Opinion so generally receiv'd, that I need say nothing about it, but proceed to shew the Way and Manner by which that is perform'd.

The Circulation of the Blood through the Heart, &c.

The ascending and descending Trunks of the *Cava* unite opposite to the Heart, and open into its right Auricle, or Ear; and at the Place where they enter, there is a small Protuberance made by their Coats on the Inside, like an *Isthmus*, which hinders the Blood of either Trunk from rushing against the other, but directs both into the Ear. The right Ear receives in its *Diastole*, that is, when it is distended, all the Blood from both Branches of the *Cava*, which it empties by its *Systole* into the right Ventricle of the Heart, which at the same time is in its *Diastole*. The right Ventricle in its *Systole* presently empties itself into the Pulmonary Artery, or that of the Lungs, for it cannot return back again into the Ear, because of the *Valvulæ Tricuspides*; as that which is once receiv'd into the Ear cannot return into the *Cava*, because of the tendinous Circle about its Mouth, which contracts itself as often as the Ear is filled. As often as the Blood has taken its Progress thro' all Parts of the Lungs, in the Pulmonary Artery, it is receiv'd from its capillary Branches, into those of the Pulmonary Vein, and is convey'd by it back again into the left Ear of the Heart, which, by its Contraction, thrusts the Blood into the left Ventricle, then in its *Diastole*, and when that is contracted, it is thrust out into

into the *Aorta* ; for it cannot come back again into the Ear, becauſe of the *Valvulæ Mitrales*.

The Aorta.

The *Aorta* having receiv'd the Blood from the Left Ventricle, ſends out two ſmall Branches, called the *Coronariæ*, which go to the Heart, and then forming a ſmall Arch, by which the Force of the Blood is ſomewhat abated, in its Expulſion it is divided into the *Aorta* aſcending and deſcending.

Its Diſtribution into all Parts.

The Subclavian *Arteries.*

The aſcending Trunk climbing up by the Windpipe to the Top of the Breaſt, ſends forth two Branches, call'd the *Subclavian*, which run under the Channel-bones on each Side. Theſe ſend forth ſeveral other Branches, both from their upper and under Side ; from their upper Side ſpring thoſe Arteries, which, in Men, are call'd the *Cervical*, being partly ſpent on the Muſcles of the Neck and Breaſt, and partly on the *Glandulæ Thyroides*. Out of their lower Side proceed the ſuperior *Intercoſtals*, which paſſing thro' the Cheſt, ſend forth ſeveral Branches to the Arms in human Bodies, and to the Fore-legs in Brute Creatures.

The Carotid *Arteries.*

Where the *Subclavians* go off from the great Artery, on each Side there ariſe two other principal Branches, which aſcend upwards towards the Head, and are called the *Carotid* Arteries: Theſe are ſpent chiefly on the Brain, forming there the *Rete Mirabile*, and *Plexus Choroides*, &c. but as they aſcend, they detach ſeveral Branches to the Windpipe, *Larynx*, ſome to the Tongue and lower Jaw, and others to the external Parts of the Head. By theſe four principal Branches, to wit, the *Subclavian* and *Carotids*, the whole Head and Neck, as alſo the external Parts of the Cheſt and Fore-legs, are ſupplied with Nouriſhment.

The deſcending Trunk.

The deſcending *Aorta*, as it goes down towards the Midriff, ſends forth the inferior *Intercoſtals* and the *Bronchial* Artery, which accompany the Branches of the Windpipe in the Lungs ; and when it arrives at the Midriff, it detaches thoſe called the *Phrenick* Arteries, which are diſperſed through the Midriff and *Mediaſtinum*. After it has paſſed through the Midriff, it marches downwards as far as the laſt *Vertebra* of the Loins, but by the Way ſends off ſeveral Branches to the Stomach and other Inteſtines, as the *Cæliack*, the *Splenick*, and the upper *Meſenterick* ; after theſe ſpring forth

Its Distribution. the Emulgent Arteries, one on each Side, which go to the Kidneys; and below these, from the main Trunk also arise the *Spermaticks*, which go to the *Testicles* and *Ovaria*, &c. then the lower *Mesenterick* communicating with the upper, supply the whole Mesentery.

As soon as the Trunk of the great Artery has reached the Top of the *Os Sacrum*, it divides itself into two equal Branches, called the *Iliacks*, which are again subdivided into the *External* and *Internal*. From the *Internal* proceed those called *Musculæ*, which are bestowed on the *Psoas* and Muscles of the Buttocks; as also the *Hypogastricks*, which run to the streight Gut, the *Matrix*, and Bladder, the *Prostates* and Yard, and to all the other Parts contained within the *Pelvis*. From the External *Iliacks* arise first the *Epigastrick* Arteries, which turning forwards, creep along the Outside of the Rim of the Belly, as far as the Navel, where they meet the *Mammillary*. The next are those called the *Pudenda*, which go to the Privities of both Sexes. Afterwards the *Iliack* Branches go to the Thighs, and are then call'd the *Crural Arteries*, supplying the hind Legs and Feet with many considerable Branches.

This is the Order and Distribution of the principal Arteries of almost all Animals, each of which Arteries are subdivided into others, and these again into others, till at last the whole Body is overspread with most minute capillary or Hair-like Arteries, which frequently communicate one with another; so that when any small Artery is obstructed, the Blood is brought by the communicating Branches to the Parts below the Obstruction, which must otherwise have been depriv'd of its Nourishment. Nature has observ'd the same Oeconomy in the Distribution of the Veins, that in Case any Vein should be obstructed, the Blood might not stagnate, but be also return'd by other communicating Branches.

The Arteries very strong, and endued with a Spring. But before I proceed to an Account of the Veins, I shall observe farther concerning the Arteries, that as it is their peculiar Province to carry the Blood from the Heart, and distribute it into all Parts of the Body, they are perfectly fitted for that Purpose by their Structures: For an Artery being compos'd of three Coats, the middlemost very strong, and endued with Elasticity, by virtue

virtue of the ſpiral Direction of its Fibres, it is thereby enabled to bear the frequent Sallies of the Blood in its Expulſion from the Heart; and leſt theſe Fibres ſhould ſeparate upon any violent Impulſe, the innermoſt Coat, though a fine tranſparent Membrane, yet it is wove ſo cloſe, as to be able to preſerve the middlemoſt, and keep the Blood within its proper Channels.

It is moreover to be obſerved, as the Arteries are conical Channels, and grow gradually ſmaller, ſo their Coats grow proportionably thinner. And the Coats of the Veins ſeem, according to the Opinion of the moſt modern Anatomiſts, to be only a Continuation of the Coats of the capillary Arteries, reflected back again towards the Heart. But although the Coats of the Veins be the ſame with thoſe of the Arteries, yet it is to be taken Notice of, that the muſcular Coats of all the Veins are as thin as in the capillary Arteries; the Preſſure of the Blood againſt the Sides of the Veins being much weaker than that againſt the Sides of the Arteries, and therefore not requiring its Channels to be ſo thick and ſtrong.

The Coats of the Veins a Continuation of thoſe of the Arteries.

The Veins are not endued with Pulſation, as the Arteries, becauſe the Blood falls into them with a continual Stream, from the capillary Arteries, which by reaſon of their Smallneſs, have only a very weak, or ſcarcely any Motion; and then as it advances towards the Heart, it moves from a narrow Channel to a wider; and therefore its Motion would have been extremely languid and ſlow, had not Nature contriv'd ſeveral Helps to promote its Paſſage. For that Reaſon, as it is the Office of the Veins to return and carry back all the Blood to the Heart, there is to be ſeen in moſt of them (eſpecially in ſuch as have their Direction upwards) ſeveral Valves at convenient Diſtances, ſometimes one, and ſometimes more, like ſo many half Thimbles ſtuck to their Side, with their Mouths towards the Heart; and as the Blood moves that Way, they are preſſed cloſe to the Sides of the Veins; but if it ſhould fall back, it muſt fill the Valves, and ſtop up the Channel, that no Blood can repaſs them. And beſides theſe Valves, it is alſo obſervable, that in many Places where there is a Branch of a Vein, there is an Artery lies under it, which, by its continual Pulſations, helps to forward the venal Blood towards the Heart; ſo that albeit the Blood moves from a narrow Channel into a wider,

The Veins have Valves.

wider, as has been obſerved, and its Motion is in many Places directly upwards, yet nothing can happen in a natural Way to retard its Progreſs.

But I ſhall retain the Reader no longer with the Difference between the Veins and Arteries, believing what has been already ſaid, ſufficient to give any one a Notion of their ſeveral Offices; I ſhall therefore proceed to give ſome Account of the Order and Diſtribution of the Veins, as they correſpond with the Arteries.

The Cava. As the great Artery receives the Blood from the Heart, and diſtributes it from thence into all Parts of the Body; ſo the *Cava*, like a main River, receives into it the Blood which is conveyed from all Parts of the Body, proceeding at firſt from Veſſels infinitely ſmall, and afterwards uniting in large Branches, which empty themſelves into its ſuperior and inferior Trunks at proper and convenient Diſtances.

The deſcending Cava. The ſuperior, or deſcending *Cava*, receives firſt the Coronary Vein from the Heart, near that Place where it opens into the Ear. As ſoon as it pierces the *Pericardium*, it receives the *Vena ſine pari*, which is made by the Union of the Veins of the Ribs on each Side.

Its Diſtribution. The *Subclavian* and *Jugular* Veins are pretty large Veſſels, which anſwer to the *Subclavian* and *Carotid* Arteries, and are the next of any Note that open into the deſcending *Cava*. The *Jugulars* are divided into the *External* and *Internal*; the *External* is that large Vein which runs along the Outſide of the Neck, called in a Horſe the Neck-vein, and is moſt commonly opened when Blooding is required. This Vein receives and carries back that Portion of the Blood which comes from all the external Parts of the Head and Face, *viz.* from the Eye-veins, the Temple-veins, and thoſe of the Noſe and Lips. Into the *Internal Jugulars* open all thoſe Veins which lie within the Bars of the Mouth, and under the Tongue, and all the other Branches which communicate with thoſe of the Brain.

The *Subclavian* Veins, *viz.* the two large Branches which paſs under the Channel-bones, not only receive a great Part of the Blood which comes from the Cheſt, but likewiſe have all thoſe Veins open into them, which run along the outward Part of the Breaſt, Fore-legs, and Feet, ſuch as the Breaſt-veins, that run between the Fore-legs, which

which Farriers ſometimes open in Fevers, *&c.* the Plate-veins, the Shank-veins, and Shackle-veins, as alſo the Veins of the Cornet and Toe, which are uſually opened in Diſeaſes of the Legs and Feet.

The aſcending Cava.

The *Cava aſcendens*, or the great aſcending Vein, which anſwers to the great deſcending Artery, receives alſo all thoſe Branches of Veins which return the Blood from moſt Parts of the lower Belly, *viz.* the *Meſenteriæ* from the Meſentery, the *Portæ* from the Liver, the Emulgents from the Kidnies, the Spermatick Veins from the Parts of Generation in both Sexes. And after it divides itſelf, as the Artery, into the internal and external *Iliacks*, it receives ſeveral Branches. Into the Internal open the *Hypogaſtricks*, by which the Blood is returned from the *Matrix*, the Bladder and ſtreight Gut; and into the External open the *Epigaſtricks*, with Blood from the *Peritonæum*, and external Parts of the lower Belly; and into the *Epigaſtricks* open the *Crurals*, which receive all the Blood that flows from the extreme Parts; for into them open thoſe Veins, improperly called by Farriers the *Kidney-veins*; as alſo the *Spavin-veins*, the *Flank* and *Spur-veins*, with that of the Rump, called the *Tail-vein*.

Its Diſtribution.

Theſe Things being premiſed, it will be eaſy for any one to form an Idea of the Diſtribution of the Blood into all Parts of the Body; eſpecially if it be farther conſidered, that the Veſſels in which the Blood flows, are divided and ſubdivided into an infinite Number of Branches; and that even all the Parts of the Body, whether thoſe that are hard, or thoſe that are denominated ſoft Parts, ſeem to be no other than ſo many infinitely ſmall Tubes variouſly modified and combined together; for by this Means the whole Body is filled with Blood and other nutritious Juices, and receives its Nouriſhment from Blood, as the Blood itſelf is recruited and repaired by the Aliment. And from the ſame Conſideration it is alſo evident, that no Animal Body can be ſuſtained without the Requiſites of Food and Reſt, by Reaſon the Structure of all Animal Bodies is of this Sort; that is to ſay, all are made up of Fibres, and theſe Fibres are again made up of thoſe that are leſs, and ſo on *in infinitum*. They muſt therefore, becauſe of the Infinity of Pores and Inteſtines that are in them, require

The Nutrition of the Parts.

conſtant

conſtant Supplies, as there are continually ſome Dregs and Excrements exhaling through them.

Of inſenſible Tranſpiration.

But this will appear ſtill more evident, when we conſider, beſides the *Effluvia* that go off inſenſibly in this Manner through the Pores and Interſtices of the Body, that moſt of the Glands are continually ſeparating ſome Part of the excrementitious Matter of the Blood; though all that is diſcharged by the Mouth and Noſe, by Urine and Dung, and by Sweat, or any other ſenſible Way whatſoever, does not near amount to the Diſcharge that is made through the Pores by inſenſible Tranſpiration. This is ſo palpable a Truth, and has been ſo well proved by the Experiments of *Sanctorius*, that there needs be nothing farther ſaid about it; and therefore we may conclude, that ſince the Bodies of all Animals are thus compounded, and made up of Matter which is full of Pores and Interſtices, and maintained by Juices, which are again capable of being diſſipated and waſted through thoſe Pores, there muſt be continual Supplies of Food to maintain thoſe Bodies in an uniform State.

Now it is plain, that all Bodies ſuffer a Diſſipation and Waſte, if the Quantity of the Aliment be abated: For in ſuch a Caſe we obſerve any Creature grow lean and emaciate. It is alſo evident, that all ſuch ſuffer by Exerciſe, by hard Labour, by Want of Reſt, when it is the ſtated Time of Sleep; and by many other Ways, not neceſſary to be mentioned. And therefore all Creatures are under an indiſpenſable Neceſſity both of Feeding, and taking ſuitable Reſt, to make up the Waſte and Decays of Nature; for as often as there is a great Diſſipation by Labour, or by any other Way, the ſmall *Fibrillæ* are thereby abraded and wore by the quick Motion the Blood and Spirits were in during that Exerciſe; or even, if the Body was not in Exerciſe, it will ſuffer by the conſtant Activity of the Spirits themſelves; ſo that a ſtated Time of Reſt muſt alſo be neceſſary for all Bodies, as well as Food: For when the Body is at Reſt, the Spirits are, as it were, lull'd and laid aſleep; ſo that the Blood acquires, during that Time, a more uniform and gentle Motion, and is more equally diſtributed into all Parts, and thereby fills up all the vacant Spaces that are made during the Time of Exerciſe, *&c.*

But it may be expected, before I put an End to this Diſcourſe, that I ſhould ſay ſomewhat more particularly concerning Secretion; but I ſhall only obſerve in general, that

it

it will be neceſſary to conſider, that the Blood, examin'd chymically, is found to conſiſt only of the following Principles, *viz.* Volatile Salt and Spirit, ſome Phlegm and Sulphur, and a little Earth, but little or no fixed Salt. Now every one, who is the leaſt acquainted with Chymiſtry, muſt be ſenſible how many different Sorts of Liquors may be form'd out of a few Principles variouſly combin'd together : So that although the Blood itſelf ſimply conſiſt only of theſe above-mention'd, and to the Eye ſeems only to be made up of its red and ſerous Part; yet, according to the lateſt Obſervations, there are near thirty ſeveral Liquors ſeparated from it; all which is owing to the various Structure of the Glands, ſome of which are ſo ſmall, and ſo variouſly wound up, and their Veſſels drawn out into ſuch extraordinary Length, that nothing but the moſt minute and ſpirituous Particles of the Blood can paſs through them; and doubtleſs, of ſuch a Structure is the cortical Part of the Brain, by which the animal Spirits are ſecerned. Others again are more wide, and ſeparate chiefly Excrements. But I ſhall not enter upon this Subject, ſeeing thoſe who have any Curioſity that Way, may be fully ſatisfied by peruſing ſeveral Books that have been profeſſedly writ on that Subject.

The End of the Anatomy of a Horſe.

THE

FARRIER's NEW GUIDE.

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WITH THE

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THE FARMER'S NEW GUIDE,

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AND

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OF

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WITH THE

Nature of Dung, &c.

THE FARRIER's NEW GUIDE.

CHAP. I.

Of the Diſeaſes of Horſes in general, and the Cauſes thereof.

AS Health conſiſts in a due and eaſy Motion of the Blood, ſo a Diſeaſe may be properly ſaid to be an unuſual Circulation of the Blood, or when its circular Motion is augmented or diminiſhed throughout the whole Body, or in ſome Part only; and thus a Creature may be properly term'd diſeaſed, when its Blood flows faſter than uſual, or when it is irregular in its Motion, being ſometimes ſlow, and ſometimes more quick. Or laſtly, when its Progreſs is impeded and hindered in ſome particular Part of the Body only, as is common in all Swellings, *&c.* and therefore whatever occaſions an unuſual Circulation of the Blood, in any of the foregoing Reſpects, may be accounted the Cauſe of a Diſeaſe.

A Diſeaſe defined.

Now the Cauſes which bring on Diſeaſes being in a manner Infinite, ſince moſt Accidents to which Bodies are expos'd from other Bodies, may be the Occaſion of ſome Diſtemper; and likewiſe ſince Diſeaſes may proceed from the Action of the ſame Body upon itſelf, in a way that is either voluntary or involuntary; I ſhall therefore forbear all unneceſſary and unprofitable Deviations, and only take Notice of thoſe Cauſes which are moſt apparent, and the moſt common.

The Antients being unacquainted with the true Structure and Oeconomy of animal Bodies, aſcrib'd a great deal to thoſe Qualities which they believ'd to be in all Bodies, proceeding from the four Elements, as alſo to the Errors of Feeding, Exerciſe, and Reſt, *&c.* which they called the *Nonnaturals.* And our Farriers, eſpecially *Markham* and *De Grey*, in Imitation of them, have puzzled their Readers with a ſort of Philoſophy, which neither themſelves underſtood, nor will ever be of any uſe to Poſterity. The one begins with Generation and Corruption, the other with the Formation of Animal Bodies out of the four Elements, *viz. Fire*, *Air*, *Water*, and *Earth*; and ſubſequent to them to be made up of four Humours, *viz. Blood*, *Phlegm*, *Choler*, and *Melancholy*; and accordingly, their Bodies were of different Temperaments, hot and dry, cold and moiſt, as this or that Humour was predominant. Nay, *Markham* has refin'd ſo far on theſe Notions, as to judge by a Horſe's Colour and Complexion, which of all the Elements had the Aſcendant in him; and, conſequently, whether he is of a cholerick, melancholy, or phlegmatick Diſpoſition.

I ſhall very readily own, that ſome of thoſe Marks, which that Author has taken Notice of, may oftentimes denote the Faults and Imperfections of Horſes; but that they are reducible to ſuch Temperaments and Humours, as he has aſcrib'd to them, is a meer Dream, and, doubtleſs, may have been the Death of ſome Thouſands of Horſes in this Kingdom; ſince it is reaſonable to ſuppoſe, that moſt of the *Engliſh* Farriers, building upon him, gueſs at the inward Diſtempers of Horſes, more from their Colour and Complexion, than from any other Signs whatſoever.

All that can juſtly be obſerv'd in Horſes, as to their Temperaments, is the two Extremes of too much Fire or too little, the reſt inclining more or leſs to the one or

to

to the other. When a Horſe has too much Fire, and is therefore untractable and unmanageable (if that Diſpoſition is not itſelf a Diſeaſe) it expoſes him to a great many Accidents which would be needleſs to name; beſides, that by the continual Reſtleſſneſs of his Spirits, and the conſtant Hurry of his Blood, he muſt therefore be ſubject to ſeveral Diſtempers, more particularly to Fevers, and oftentimes thoſe of the worſt Kind. If on the other Hand, a Horſe be of a dull, ſluggiſh Diſpoſition, he muſt alſo be expos'd to Diſtempers that are peculiar to a ſlow and languid Blood; and the nearer any Horſe approaches to either of theſe Temperaments, he is the more obnoxious to their Diſtempers.

What to be obſerv'd concerning the Temperament of Horſes.

Horſes may be alſo ſaid to be of different Temperaments at different Periods of their Life; and therefore a young Horſe being full of Blood, and his ſolid Parts as yet of a looſe Texture, muſt be more ſubject to Diſeaſes, than one who is arriv'd at his Prime; and thoſe Diſeaſes muſt be of worſe Conſequence to him, if not carefully look'd to. And likewiſe a Horſe who is grown old, tho' ſuch an one is not ſo apt to be diſeaſed as a young Horſe, yet their Diſeaſes more frequently end in Death, or prove irrecoverable; becauſe the Blood at that Time grows languid, and loſes the Vigour that is peculiar to Youth, and the middle Age, which muſt needs deprive them of the Benefits and Aſſiſtances of Nature. But a Horſe in his Prime, having then all his Parts well conform'd, and his Blood in its beſt State, neither too luxuriant, nor too much depauperated; and likewiſe the Quantity of Blood being in that Age nearly adjuſted to the Capacity of the Veſſels in which it flows; he is therefore neither apt to be diſeaſed, nor are his Diſeaſes apt to be of a long Continuance.

But the Farrier ought carefully to take Notice, that albeit theſe Obſervations concerning Temperaments may, for the moſt Part, be very juſt, yet it is undeniable that ſome are more robuſt and hardy, while but Colts, than others are at the Prime of their Age; and ſome retain a great deal of their Vigour, even when they are grown old, and as eaſily get over any Accident, as Horſes that are young. And likewiſe it is to be obſerved, that ſome Horſes of a faint waſhy Colour, ſometimes prove hard and durable; and therefore, beſides all common Rules and Obſervations, it may be neceſſary, to the forming a right Judgment of the

Temperaments and Conſtitutions of Horſes, to have Recourſe to Examination and Trial.

After what has been ſaid as to Temperaments, I ſhall not trouble the Reader with thoſe confuſed and unprofitable Speculations about Members, Powers, Actions, and Operations, and the reſt of thoſe they termed *Naturals*, but proceed to the *Nonnaturals*, which, according to the Ancients, were reckoned Six in Number, *viz.* Air, Meat and Drink, Sleep and Watching, Motion and Reſt, Things excreted and retained, and the Affections or Motions of the Mind, and were ſuch as hurt by Neceſſity; ſo that this Enumeration is more accurate, as applied to brute Creatures, than to Man, who has the Uſe of his Reaſon, and may therefore avoid ſeveral of the Accidents proceeding from them.

Nonnaturals, how they profit, or become hurtful.

Now theſe are ſaid to be profitable, or hurtful to all Creatures; but our Buſineſs at this Time is only to take Notice of them in the latter Senſe. And firſt, as to Air.

The Air may be many times the Cauſe of Diſeaſes; for if that be too much rarified, it hurts the Blood's Circulation, not being of ſufficient Force to help it through the Lungs; whence its Motion becomes ſlow, and Perſpiration decreaſes, which leaves a Load upon the Veſſels, and renders the Blood viſcid and tenacious. The ſame Effect alſo happens from the Air's being too groſs, for then the Circulation of the Blood is impeded in the Lungs, by its too great Preſſure and Weight upon them.

Food may alſo become hurtful to Horſes, both as to its Quantity and Quality; for if that be muſty and raw, corrupt and unclean, it muſt breed Crudities, and thereby render the Chyle viſcid, which will of Neceſſity retard the Motion of the Blood; and if it be of too hot and ſpirituous a Nature, it muſt, on the contrary, render the Blood too thin, and thereby increaſe its Motion too much. Immoderate Feeding, be the Food never ſo wholſome, eſpecially when the Horſe wants Exerciſe, muſt vitiate the Blood; for in ſuch a Caſe there is no Room given for Digeſtion, ſo that a great deal of Chyle muſt enter into the Maſs of Blood, before it has been thoroughly prepared in the Stomach. The ſame Effects may be alſo produced from exceſſive Drinking, eſpecially of ſtagnated Waters, or Waters proceeding from ſome Sort of Minerals.

Long

Long continued Exerciſe, eſpecially when it is too violent, occaſions a too great Diſſipation of the Spirits; and if a Horſe's Stomach is very full, or if he be full of Blood, it brings on innumerable Diſorders; as ſhall be obſerv'd, when we come to treat of the Diſeaſes particularly. But the want of proper Exerciſe is equally pernicious, as it hinders Digeſtion, and occaſions a too great Diſtention of all the Veſſels, which cauſes Surfeits and other Diſtempers.

A too quick Diſcharge of the Dung, before there is a due Separation of the Chyle from the excrementitious Parts, occaſions Sickneſs; for in ſuch a Caſe there is ejected and thrown out the Uſeful with the Uſeleſs, whence muſt proceed a Refrigeration, and Weakneſs of the Body, by reaſon of a debilitated Circulation of the Blood. As, on the other Hand, when a Horſe is Coſtive, and his Excrements retain'd too long, a *Plethora*, or Over-fulneſs, will be apt to enſue. But theſe are rather to be accounted Diſeaſes than Cauſes, eſpecially in brute Creatures.

Immoderate Sleep may often be the Cauſe of Sickneſs; becauſe in Sleep the external Senſes are weak, the nervous Fluid moves ſlowly, the Heart is ſeldomer contracted, and the Circulation of the Blood goes on with leſs briſkneſs: Watching produces all the contrary Effects.

As for the Paſſions and Affections, to which *Markham*, and others, have aſcribed Diſeaſes, it is very certain that theſe Creatures have their ſeveral Affections; ſuch as Love and Hatred, Fear and Anger, which may be accompany'd with a ſlow or quick Motion of the Blood, as this or that happens to be Predominant; but theſe being ſeldom Permanent, and of any continuance in brute Creatures, but chiefly adminiſter to their common Inſtinct of Self-preſervation, there cannot therefore be much attributed to them.

Beſides the above-recited Cauſes, which are indeed the moſt common and ordinary, there are an infinite Number of others, which may bring on Diſeaſes, as has been already obſerv'd; and ſuch are all outward Accidents, as Falls, Bruiſes, Wounds, and the like; as alſo unſeaſonable Evacuations, and all improper Application of Remedies, which is frequently practiſed among Farriers for Prevention, while Horſes are in a ſtate of Health. But I ſhall take ſome Notice of this in a following Chapter, and therefore proceed to the Signs.

CHAP. II.

Of the Signs of Sickneſs in Horſes.

Diſeaſes in brute Creatures hard to be diſtinguiſhed.

IT is indeed very difficult to arrive at any certain Knowledge in the Diſeaſes of brute Creatures, and therefore it is no wonder if the Farriers are miſtaken in enumerating Signs, becauſe we can only judge by outward Appearances, and not from any Inſight they can give into their own Indiſpoſitions, but eſpecially as there are many Diſeaſes that are accompanied with the ſame common Symptoms; and therefore, tho' we may be aſſured that a Horſe has a Fever, or a Strangury, we cannot at the ſame Time be certain, without a very careful Examination, whether he may not have an Inflammation in the *Pleura*, or in his Kidneys. All the Signs that theſe Creatures uſually give in the Affections of particular Parts, is by turning their Head towards that Part. Neither is that always to be depended upon; for a Horſe may turn his Head towards the right Side of his Belly; and the Farrier, who chiefly takes that Indication to ſignify a diſeaſed Liver, may be groſly miſtaken, ſince a Horſe very frequently gives the ſame Sign in a Cholick. The only Way therefore to get an Inſight into the Diſeaſes of Horſes, is to make a judicious Compariſon of all the Signs that can be gather'd in any Diſtemper, and by that Means the Farrier may go on to adminiſter his Phyſick with ſome Aſſurance; and herein they may be very much aſſiſted by the Remarks of the Sieur *De Solleyſell*, who has been a more accurate Obſerver of all thoſe Things, than any other who has wrote upon the Subject.

The firſt Sign that a Horſe commonly gives of Sickneſs, is loathing his Food; this is common to all Fevers. In ſome Caſes a Horſe looks wild and haggard, and albeit at other Times he was eaſy and tractable, he now grows diſobedient and reſtleſs, will neither ſtand long, nor when he lies down, will he continue in that Poſture, but immediately ſtarts up again: This may, for the moſt Part, be reckon'd a Sign of violent and exceſſive Pain, and no doubt, proceeding from an Inflammation of the *Pleura*, or Lungs, eſpecially if his Heart and Flanks beat, and that he labours for Breath. Other Signs of Sickneſs are, a dry and parch'd Mouth, the Tongue white and cruſted over, and the Breath

exceſſive

exceſſive hot. Some Signs are alſo exhibited which denote Sickneſs, but are different from the former; as when a Horſe hangs his Head, has a Coldneſs and Dampneſs about his Ears, his Eyes watery, ſometimes with a Mixture of Corruption, ſlow and dull in its Motions, being apt to ſtumble, as often as he attempts to walk; takes no Notice of any other Horſe, or of any Perſon coming near him. Some Sickneſſes, as Intermitting Fevers, will produce ſome Intervals of Trembling and exceſſive Sweating; and ſome have Symptoms compounded and made up from complicated Sickneſſes, which exhibit ſeveral of theſe Signs together.

There may be alſo divers Signs taken from the Dung and Urine of a Horſe; but thoſe from the Urine are the moſt certain: When a Horſe in Sickneſs ſtales clear, and when that is preſerved, if there be no Sediment in it, it prognoſticates a growing Diſtemper; but when the Urine turns of a reddiſh or yellowiſh Colour, and has either a Cloud ſwimming in it, which is not black and earthy, or a Sediment falling to the Bottom, and begins to have a Rank Smell, it is then a Sign the Diſtemper begins to break: But when the Cloud is of an earthy or black Colour, and coheres in a Body without parting, it is a Sign the Diſeaſe will prove mortal. It may be farther remark'd, as to Urine, if it be different at different Times, ſometimes reſembling that of a ſound Horſe, and ſometimes giving Signs of Sickneſs, it then betokens a great Malignity in the Diſtemper, proceeding from an Inequality in the Blood's Compoſure, which cauſes alſo an Inequality in its Motion.

There might be alſo Signs taken from the Pulſe, which is plainly enough to be felt on the Temples and Fore-legs of a Horſe; but as that Method has never as yet obtain'd among Farriers, I ſhall therefore paſs it over.

The Sieur *De Solleyſell* obſerves, when a Horſe piſſes without ſtriding, and without putting forth his Yard, after long Sickneſs, (unleſs he has been accuſtomed to do ſo in a State of Health) it is a mortal Sign; and likewiſe that it is a no leſs fatal Prognoſtication, when the Hair of a Horſe's Skull or Tail may be eaſily pluck'd off. The ſame Author obſerves further, that it is alſo a dangerous Sign when a Horſe lies often down, but ſtarts up again immediately, not being able to breathe freely in a lying Poſture; and on the contrary, that it is a very promiſing Sign when a Horſe lies quietly in the Decline of Sickneſs. But more parti-

cular Notice ſhall be taken of thoſe Things, when we come to treat of the Diſeaſes themſelves.

CHAP. III.

Of the Method of Cure.

WHEN the Farrier has diligently enquired into the Nature and Cauſe of a Diſeaſe, his Buſineſs is, in the next Place, to adminiſter ſuch Things as are proper to reſtore Health; and that he may the better ſucceed therein, I ſhall lay down the following general Directions.

Regard to be had to the moſt urgent Symptoms.

Firſt of all, A particular Regard is to be had to thoſe Symptoms that are the moſt urgent, and any Ways endanger Life; and therefore if the Signs diſcover a Horſe to have an Inflammation in the Lungs, or *Pleura*, which may be gueſſed at by his being ſuddenly ſeiz'd with Difficulty of Breathing, and an Inability to continue in one Poſture; or if a Swelling ſhould ariſe on his Throat, which might hinder him from getting down his Food, or render him liable to Suffocation, ſuch Evacuations, or other Means as are proper to remove thoſe Symptoms, muſt immediately be uſed, ſetting aſide all other Conſiderations of Sickneſs. And in like Manner, if a Horſe ſhould be ſeized with a violent Hemorrhage of Blood, the firſt Intention muſt be to ſtop it; for the removing of thoſe not only preſerves Life, but in ſome Caſes puts an End to the Diſeaſe.

Secondly, If in any Diſtemper the Indication is taken chiefly from Crudities lodging in the Stomach and Guts, then ſuch Medicines only as clear thoſe Paſſages are to be adminiſter'd, without Regard to any other; but if this be accompanied with any other Diſeaſe, then all the Medicines that are to be given in ſuch a Caſe, muſt not be levell'd at the Diſeaſes of thoſe Parts directly, but at others in Conjunction with them.

Thirdly, If the Indication is taken from the Blood, it is then to be conſider'd, that all its Diſorders depend upon its circulatory Motion being increaſed or diminiſhed; and that all the Changes in the Texture and Quality of the Blood, as alſo in its Quantity, are attended either with a Diminution or Increaſe of the Blood's Velocity; and therefore if the

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Quantity of the Blood is augmented, Bleeding and other Evacuations are neceſſary; but if the Quantity thereof be diminiſhed, then Reſtoratives, Reſt, and nouriſhing Food may be required: And if this laſt proceeds from any Error in the Stomach, cauſing Loſs of Appetite, in ſuch a Caſe thoſe Things are to be adminiſter'd which create Hunger, and help Digeſtion. If the Texture of the Blood be chang'd, as is uſual in a continual Courſe of Sickneſs, then it may be neceſſary, beſides other Intentions, to adminiſter ſuch Things as may correct the vitiated Maſs.

Fourthly, When a Diſeaſe proceeds from an Increaſe or Diminution of ſome Secretion, the Cure ought, for the moſt Part, to be performed by ſuch Things as enlarge the Secretions that are too ſparing, and reſtrain ſuch as are too liberal: And the ſafeſt Way to reſtrain an augmented Secretion, is by the Increaſe of ſome other Secretion. And indeed, this Method of Revulſion has been ſafely practiſed among all Phyſicians; and if it could be rightly underſtood by Farriers, it would be of the greateſt Importance in their Practice.

But here it is to be remark'd, that when we ſpeak of an augmented Secretion, we underſtand that as a Diſeaſe, and not as a Remedy: For ſometimes a Secretion augmented becomes a Cure; and in ſuch a Caſe it is not to be ſtopped immediately, but rather ſomewhat aſſiſted, when any ways imperfect. As for Inſtance, If a Horſe be lax, and has a Scouring upon him; when this proceeds from a Diſorder of the Guts only, by a Putrefaction of the Excrements too long detained, it may be very proper to adminiſter ſome moderate Purge, provided it be of ſuch a Nature as will not too much relax the Inteſtinal Glands. But if this Cauſe proceeds from an obſtructed Tranſpiration, as is very uſual, then ſuch Things as promote Sweat, and a Breathing through the Pores, muſt be likewiſe adminiſter'd. The like Method is to be obſerved in moſt other Secretions, as in Sweat, Urine, running at the Mouth and Noſe, which may be often obſerved among Horſes in the Decline of Sickneſs.

Nature to be carefully obſerved.

Fifthly, In the Cure of all Diſeaſes, Nature is the beſt Guide, and therefore the Farrier muſt diligently follow her. Whenever ſhe finds herſelf oppreſſed, ſhe endeavours to throw off the Load, and tries all the neareſt and propereſt Ways for her Relief; and it is for the Conſervation of Health, or recovering

covering it when loſt, that ſhe is ſo abundantly furniſhed with Drains and Outlets, for ſuch are moſt or all the Glands, by which Secretion is performed ; but though Nature is to be carefully obſerv'd, and follow'd in all her Motions, and to be aſſiſted when her Operations are too weak and imperfect, or reſtrain'd when too powerful ; yet ſhe is not to be compell'd, but muſt herſelf be the Beginner, and very often the Finiſher of the Work alſo. And therefore, whenever the Practitioner finds her own Efforts fruitleſs, while ſhe is endeavouring one while by one Secretion, and at other Times by another, to give Vent to that which oppreſſes her ; he is not to be over-forward in aſſiſting her in her reſtrain'd Inclinations, but conclude with himſelf, that the Matter is not as yet render'd of ſuch a due Magnitude or Smallneſs, as to be carried along the Canals, and diſcharg'd by the Veſſels which are appointed for that Purpoſe ; ſo that his Buſineſs is only to help her with ſuch Things as will thicken or attenuate, *&c.* as he ſhall ſee Occaſion ; waiting with Patience until her more ſenſible Operations become permanent and laſting, and that ſhe becomes free and eaſy in all her Exertions ; and this Change is what Phyſicians call the *Criſis*, or Turn of a Diſtemper.

But when her Operations are too violent and powerful, if Life is thereby at Stake, as in the Inſtances above-mention'd, by an exceſſive Hemorrhage of Blood, or an Influx into ſome Part, occaſioning a Suffocation ; or, in Caſe of an augmented Secretion continuing too long, then the Rules already laid down muſt be followed. But if it happens, as may be often obſerved in imperfect *Cryſes*, that an Hemorrhage of Blood proceeds only from a Rupture of Veſſels that are very ſmall, or that the Blood, by Reaſon of its abated Heat, flows but moderately ; or if a Tumour ariſes, or an Abſceſs be found in any Part of the Body, by which Life is not in Danger ; theſe are not to be prevented, but manag'd in a Way that is ſuitable to the Nature of ſuch Accidents.

CHAP.

CHAP. IV.

Discovering some Errors in the Methods usually taken to prevent Diseases in Horses, with the propereſt Means to preſerve Health.

Phyſick unneceſſary to Horſes, while they are in Health.

NOthing is more frequent among Farriers, than the adminiſtring Phyſick to Horſes that are ſound and healthful, in order to prevent their falling into Diſeaſes; with this Notion moſt People, as well as they, have been prepoſſeſs'd, inſomuch that they have tied themſelves up to Times and Seaſons, believing a Horſe can never keep ſound, if he is not bled at this Time, purg'd at that, and at another Time rowell'd; ſome have *Cordial Balls*, or *Drinks*, which they keep as Secrets, and which they affirm will prevent all Manner of Infection and Sickneſs. But I ſhall endeavour to ſhew what manifeſt Abuſe there is in all thoſe Things, and lay down ſome *General Rules* which may truly be of Service to the Preſervation of Health.

Tho' Health, in its beſt Eſtate, is only relative, yet all Creatures may be properly ſaid to be in Health, when they ſleep, eat, and digeſt, when they move without Pain; and all this depends upon a regular and uniform Motion of the Blood; now whatever contributes to keep up that uniform and regular Motion, muſt be the Means to preſerve Health; but it is very certain, the Means that are uſed in Time of Sickneſs, to reſtore that Regularity in the Blood's Motion, muſt be prejudicial in a State of Health, becauſe they muſt effect ſome Change in the Animal Oeconomy, which was not wanting. Thus *Bleeding* and *Purging* may be of Uſe to put a Check to a Diſeaſe, if a Horſe be plethorick and full of Blood, or if a Horſe has any other Signs that require Evacuation; but then it is to be conſider'd, that theſe are Diſeaſes actually begun; and if a Horſe has none of theſe Signs, the Effect that any ſuch Evacuations can have upon him, muſt be a Leſſening the Quantity of his Blood, which is often of bad Conſequence; becauſe the Leſſening the Quantity of the Blood, gives it a different Motion from what it had before.

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An Objection answered. If any one ſhould plead that theſe Evacuations are made to bring a Horſe into a better State of Health, and thereby ſtrengthen his Body, and enable him the more to reſiſt Diſeaſes; I anſwer, there is a certain State of Health which is natural and agreeable to every Horſe, and conſiſts in the Requiſites abovemention'd, to wit, in a Life free from Pain, or any inſenſible Imperfection; and, no doubt, as among Men, one Horſe may, comparatively ſpeaking, enjoy a more perfect degree of Health than another is capable of; and this is owing to ſome Difference in their original Structure and Make, whereof we are Ignorant; ſo that they may as well turn a black Horſe white, or a white Horſe black, as to pretend to make a Horſe Strong, who is naturally of a weak and delicate Conſtitution. All therefore that can be expected from tampering with Horſes that are in their beſt Eſtate, is either little or no Alteration at all, if a Horſe has Youth and Vigour to overcome the Shocks given to Nature by Phyſick, or elſe an Alteration for the worſe; becauſe the ſtrongeſt Horſe may thereby be brought into an habitual Weakneſs, which becomes a Diſeaſe; and a Horſe that is Weak, may become yet much Weaker; and theſe Accidents frequently happen by ſuch unſkilful Management, though they are generally attributed to ſome other Cauſe.

The Cauſe of ſeveral Errors in the Practice of Farriers. But what has led Farriers into thoſe Errors, is a confuſed Notion many of them have of all Diſeaſes proceeding from corrupt Blood; and therefore, as if the Blood of Horſes was like Pond or Ditch-water, which gathers Mud and Filth at certain times, they think it ſhould be often cleanſed. And becauſe the Blood of theſe Creatures (as moſt of them are uſed to Toil and Labour) is generally of an unpleaſant Aſpect, they ſeldom or never take Blood from any Horſe, but they think him full of bad Humours, not conſidering but this may be the natural State of his Blood; and for that Reaſon they do not often miſs telling the Owner, that his Horſe wants Purging as well as Blooding.

Another thing which ſeems to have given Encouragement to thoſe Methods, is, becauſe ſome Horſes have been obſerv'd to eat plentifully, and not thrive, till after Evacuations were made pretty largely. Whenever any ſuch thing happens, there is the Sign of a Diſeaſe proceeding from ſome Obſtructions in the Meſentery, or from ſome viſcid ſloughy Matter lodg'd in the firſt Paſſages, which may hin-

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der a sufficient Quantity of Chyle entring into the Mass of Blood. But I don't mean such, but those, who, upon full Experience are found to be in as sound a State of Health, as they have ever been known to be in at any time, but are bled and purged, or have Cordials given them at such Times as are prescrib'd in Farrier's Books, or have otherwise obtain'd by Custom.

But that I may not be thought too peremptory on this Head, or to deviate too far from a Method that has been so universally received; I shall therefore lay down some few Cases wherein Blooding, or other Evacuations, may be made, even when there are no Indications to be taken directly from Sickness; but these too are discretionary, and to be gone about with Caution; as for Instance, if Blooding be moderately and sparingly used, it may be of Service to young Horses, especially after hard Exercise, or after a Journey in a hot Season, because either the one or the other is apt to augment the Blood's Motion too much, which, before it has any ill Tendency, may be thus remedied. But yet this may not be often necessary to Horses that are accustomed to constant Exercise, as Hunting; or those that travel all the Year, as Stage-Horses or Post-Horses, but only to such as are more habituated to Ease. *Secondly*, A Horse that has been much us'd to standing in the Stable, and has but seldom Exercise, may also have a Vein open'd upon Suspicion of the Blood's growing too viscid, and stagnating for Want of due Exercise; because, while he is thus kept, a Disease may insensibly, and by Degrees, be creeping upon him, while there is yet no Indication given from sensible Signs. *Thirdly*, If a Horse has stumbled into a Pit of Water, or a deep Ditch, and has continued some Time therein, though he does not immediately give Signs of Sickness, yet such Accidents are a sufficient Indication both for Bleeding and other Remedies, because the Adstriction of the Pores, occasion'd by the Coldness and Pressure of the Water, may cause a Fever, or a violent Cold, that may end in the Glanders, or some other fatal Distemper.

The same Cautions may be also observ'd as to Purging, and that should never be gone about barely at a Venture, but when the Farrier or Owner may have some Suspicion at least; as, for Want of Exercise, eating unwholsome Food, or drinking bad Water, or the like, whether that proceed from Carelessness or Necessity. In these, or such like Cases, Blooding or Purging may be used by Way of Prevention; and

and I ſhould the rather ſo far give into thoſe Methods, with reſpect to brute Creatures, becauſe ſeveral of their Diſeaſes may actually have ſome Footing before they can be well diſcerned. But yet, as there is even in all theſe Caſes an Indication given, at leaſt from foreign Cauſes, what has been here advanced, will not juſtify the Conduct I am cenſuring, which is only adminiſtring Things at Random, and which therefore often prove prejudicial.

I ſhall therefore venture to affirm, that unneceſſary Evacuations cannot be the Way to prevent Diſeaſes in Horſes, but that may be better effectuated by a due Care in their Keeping.

A due Care in Keeping, the propereſt Way to prevent Sickneſs.

All Evacuations leſſen the Quantity of the Blood, but moſt immediately Blood-letting; and when that has been frequently repeated, or been taken away in a large Quantity, it often becomes languid in its Motion, by a leſſer Quantity of Spirits, derived from a leſſer Quantity of Blood, ſo that what remains has not Force enough from theſe Spirits to reach the Paſſages of the Skin, ſo as to make a Secretion there; and from hence, inſtead of preventing Diſeaſes, it becomes the Cauſe of many. Purging has alſo the ſame Effect, though after a different Manner, and may be of a worſe Conſequence to Horſes, as all ſuch Evacuations act more directly againſt Nature, and in ſuch a Manner, that the whole animal Frame, when the Medicines happen to be of any Strength, is diſcompoſed by them; and thus a Horſe that was in Health, is expoſed to all the Injuries that can proceed from any Element. But in good and proper Keeping, all theſe Accidents are avoided, and the ſame thing effected.

The beſt Way therefore to prevent Horſes being diſeaſed, is, in the firſt Place, to have no Kind of Food given them but what is wholſome, and their Drink ſhould be Rain-water, or that of the running Brook, if ſuch are to be had.

Secondly, The next Thing to be regarded is Exerciſe, eſpecially ſince the Health of all Animals depends ſo much upon the Blood's regular Motion, for without that it is impoſſible but that it muſt be apt many times to ſtagnate; whereas if the Body is often kept moving, the Blood is not only forc'd thro' the ſmalleſt Veins and Arteries, by the ſeveral Contractions of the Muſcles, but all the little Glands and Strainers throughout the Body are thereby forc'd to diſcharge their ſeveral Contents, which muſt be a great Means to preſerve Health.

Thirdly,

Thirdly, The Exercise of a Horse ought to be proportion'd to his Strength, and likewise to his Feeding; for a Horse that is of a weak, delicate Make, cannot bear much Exercise, neither must that be violent, but gentle. In like manner, a Horse who has but short Feeding, cannot bear so much, nor such hard Exercise, as if he was kept high.

Fourthly, A Horse should be gently used when he is full, because at that time, besides the Prejudice done him by the Weight of his Stomach, the Blood receiving from thence fresh Supplies, will be apt to cause a Plenitude and Fulness of the Vessels, which may either occasion a too great Rarefaction, or a Stagnation, especially in the Lungs, by reason of their near Communication with the Heart, and their frequent Distention with Air; and Horses that are of a large and heavy Make, ought to be Rid more gently at all times, than those that are light and nimble.

Fifthly, No Habit should be broke suddenly, but by Degrees; for Instance, if a Horse has been used to travel, he ought to be walk'd out, and rid more or less for some time thereafter; because during the time of Exercise, the Blood must have acquir'd a more than ordinary Aptitude to Motion; and therefore it will be ready to stagnate in some remote Parts, where the Vessels are small. The same Rule is also to be observ'd with respect to Horses newly taken up from Grass, because they have been used both to Exercise and Air, while at their Liberty in the Fields. Neither must a Horse that has been used to feed plentifully, be suddenly reduced to a low Diet, because he will be apt to grow Faint, and oftentimes Sink in his Spirits, which may occasion very great Disorders, by reason the Quantity of the Blood is of a sudden render'd too small, in proportion to the Capacity of the Vessels. And, on the contrary, a Horse that is low, must be fed but gently, and brought to good Keeping by degrees.

Sixthly, A due Regard ought to be had to Dressing, because rubbing and combing is a sort of Exercise, especially to a Horse of Mettle, it promotes the Motion of the Blood in the extreme Parts, and greatly helps the cuticular Discharges; and therefore a Horse that has been used to good Dressing should never go without it, lest the Pores of the Skin becomes suddenly obstructed, which must unavoidably cause some Disorders. But if a Horse has never been used to any regularity, as to his Feeding, *&c.* which is the Case of some Drudges, the best Way is to continue in the same

ſame want of Method with reſpect to them; becauſe we often obſerve the bringing any ſuch into regular keeping, at firſt proves generally of ill Conſequence to them; and that for ſeveral Reaſons, which I need not here mention.

From theſe general Directions, the Reader may be able to form ſuch other Rules, as may be of uſe, not only to prevent Sickneſs, but may alſo be the Means of bringing Horſes to a better State of Health, without hazarding their Conſtitutions with the repeated uſe of Phyſick, as is very cuſtomary in this Kingdom; and proceeds from thoſe Perſons, who are uſually intruſted with the Health of our Horſes, not being acquainted with the Mechaniſm and Oeconomy of animal Bodies. I have been the more encourag'd to make ſuch Obſervations, becauſe ſome of the moſt judicious Farriers have been from Experience convinc'd of thoſe Errors, and are able to call to mind many Inſtances, of Horſes they have known to be prejudic'd by an unſeaſonable and unneceſſary Uſe of Phyſick; and methinks it would be a common Benefit to Mankind, ſo far as Horſes are ſerviceable to us, if thoſe Prepoſſeſſions could be baniſh'd, and all ſuch ſuperfluous Practice quite diſus'd and laid aſide.

CHAP. V.

Some general Rules to be obſerv'd in Bleeding and Purging.

HAVING, in the foregoing Chapter, taken Notice of ſome of the Errors committed in Blooding and Purging, I ſhall in this lay down ſome general Rules to be obſerv'd in theſe Operations.

And *Firſt*, Concerning Blooding, there is not any Operation more ready, or indeed more uſeful. As nothing can, in many Caſes, give ſuch immediate Relief; for by Bloodletting, the Heat of the Blood, and conſequently its Velocity, proceeding from whatever Cauſe, may be thereby abated: and not only its Velocity and Heat, but alſo its Viſcidity, whether from an acid, or from any other coagulating or thickning Matter, may in a great meaſure be deſtroy'd; and therefore in all Caſes where the Blood is too much agitated, and in motion, or where it is too much thickned, Bloodletting is required.

But

But we ſhall lay down ſome of the particular Indications, which chiefly call for that Operation; and in doing thereof we ſhall not tie any one up to Times and Seaſons, or particular Influences, which we find ſo much obſerv'd in Books of Marſhalſy, and in old phyſical Writers; for, according to their Doctrine, ſome Part of the animal Body muſt have been diſeaſed every Month. All the Caution therefore, that is to be had in that Reſpect, is only to avoid it as much as poſſible in the extremities of Heat and Cold, excepting when ſome urgent Neceſſity requires it.

The Signs that require Blood-letting.

Now the Signs that require Blood-letting, are firſt, an over Plenitude or Fulneſs; which may be diſcovered in a Horſe, becauſe ſuch a one will be apt to be purſive when he is put to any kind of Exerciſe, and his Stomach will ſomewhat abate. In ſuch a Caſe blooding cools and refreſhes a Horſe wonderfully.

Secondly, Blood-letting is proper in the beginning of almoſt all Fevers, whether ſimple or complicated; that is to ſay, whether the Fever conſiſts ſimply in an Augmentation of the Blood's Motion only, or when the Blood is beſides that vitiated. But Care muſt be taken, if the Diſtemper takes it Origin from the want of Blood, as very often happens after large Hemorrhages, or after long ſcouring, or after a too plentiful uſe of Evacuations, or when a Horſe has been ſome Time in a declining Condition; in ſuch Caſes, tho' ſome Indications may, perhaps, require Blood-letting, yet it is to be us'd ſparingly.

Thirdly, A Horſe ought to be Bled for all Swellings and Impoſthumations, when they happen to be ſituated on any Part of the Body, ſo as to endanger a Suffocation, or any other ill Accident; but if there be none of thoſe Appearances, and at the ſame Time have a tendency to Suppuration, Blooding ought not to be perform'd, becauſe that would be manifeſtly to oppoſe Nature, who herſelf is endeavouring to throw off what is hurtful to her in another way; but in Swellings of the Legs, occaſion'd by the Greaſe, Blood-letting is not only ſafe in the Beginning, as it may make a Revulſion, but neceſſary before they are much inflam'd, or come to break; becauſe this Diſtemper at firſt proceeds chiefly from a Stagnation of the Blood in the extream Parts, from the Smallneſs of the Veſſels, *&c.* and not from any manifeſt Diſorder in the Blood itſelf. But of this in its proper Place.

Fourthly, Blooding is neceſſary in all violent Pain, whether that proceeds from an internal or external Cauſe, as Wounds or Bruiſes; and in Caſe of inward Pains, as from an Inflammation of the Lungs and *Pleura*, or the Liver, when they can be diſcover'd; and then the Operation may be once or twice repeated; but in Pains of the Stomach and Guts, proceeding from ſlimy and viſcid Matter lodg'd in them, unleſs the Farrier could alſo be aſſur'd theſe were accompanied with Inflammation of thoſe Parts, it is better to forbear it; becauſe in ſuch a Caſe, if a Revulſion be made, the Blood may be too much diveſted of its Spirits, and Nature balk'd of her Deſign of expelling what ſhe finds hurtful to her.

Fifthly, Blood-letting is moreover neceſſary in Vertigoes, and moſt Diſorders of the Head; and in the Beginning of all Colds, by which Defluxions are apt to fall on the Lungs, and Rheums into the Eyes. And here I cannot omit taking Notice of an Error in the Sieur *de Solleyſell*, who forbids Blooding in Diſeaſes of the Eyes. It is not improbable that Author may have obſerved ſome ill Conſequences from this Operation, but it has been in ſuch Caſes as proceed from *Exinanition*, that is, when the State of the Blood is very low; for then that which is carried into the extreme Parts, very often ſtagnates, from the Want of a ſufficient Force in the Heart to drive it forwards into thoſe Parts; and when the ſucceeding Fluid has not Force enough to impel the antecedent Blood, ſo that if a Diſeaſe happen in the Eyes from any ſuch Cauſe, the leſſening the Quantity of the Blood, which is already too ſmall, muſt needs occaſion ſome very great Diſorder in thoſe Parts, if not abſolute Blindneſs. But in all ſuch Caſes as proceed from an Over-fulneſs, or from hard Riding, which drives the Blood faſter into the outward Parts, than can be readily return'd by the ſmall Capillary Veins; or if theſe Diſorders proceed from the Blood's being too viſcid, by which Means it loiters in the ſmall Veſſels of the Eyes; Blood-letting muſt then do very great Service, and is often practiſed among Horſes to very great Purpoſe. For the ſame Reaſons it may be uſeful in the Farcin, the Itch, and all Diſeaſes of the Skin.

Laſtly, There muſt be conſtant Care taken of the Age, Strength, and Conſtitution of all Horſes. A young Horſe, though he be more ſubject to Diſeaſes, as has been already obſerv'd, will, however, much ſooner recover the Loſs of Blood

Blood than a Horſe that is full aged; and a full aged Horſe ſooner than an old Horſe, becauſe all young Animals are vigorous in their Appetite and Digeſtion; but yet a full aged, or an old Horſe, if either be hardy and ſtrong, may overcome all Loſſes of this Kind, better than ſome young Horſes, who are of a waſhy and delicate Make. But I ſhall now proceed to Purging.

In what Caſes Purging is chiefly neceſſary.

I need not offer to explain what is meant by Purging, ſince every one knows that it is the diſcharging of Humours and Excrements thro' the common Paſſages of the Belly. The Way this Operation is performed, is with ſuch Medicines, as by their Irritation ſtimulate the Membranes of the Guts, whereby the *Periſtaltick* Motion is quickened ſo as to ſhake off their Contents. But if the Doſe or Potion happens to be large, or if it be made of ſuch Things as abound much with thoſe ſtimulating Particles, or, to expreſs it after the common Way, if very ſtrong Phyſick be given, it not only carries off what is contained in the Guts, but likewiſe cauſes ſuch frequent and reiterated Twitches, as drives a more than ordinary Quantity of Blood into thoſe Parts, whence is ſeparated and diſcharged Abundance of *Serum*, which is thrown off by the common Paſſages above-mention'd. And hence it is evident, that Phyſick may be ſo ordered, as to carry off more or leſs of the Subſtance of the Blood, according as the Doſe is enlarged or diminiſhed, or as it abounds more or leſs with thoſe purging Particles; and conſequently that it may be render'd either profitable or hurtful, according as it is managed.

I ſhall not here detain the Reader with the Manner of preparing the Body for this Operation; neither ſhall I lay down Rules for rendring this or that Sort of Humour fit for a Diſcharge by Medicines, which have been ignorantly, but with much Induſtry devis'd, to prepare Choler, Phlegm, or Melancholy; that Sort of Practice being juſtly now expos'd as uncertain and ridiculous, ſince it is very plain, that all purging Phyſick differs only in the Degrees of Strength, and works no otherwiſe on different Humours, than as it is able to reach only thoſe that are near, or ſuch as are more remote from the Guts, where its principal Scene of Action lies. What particular Regard is to be had to thoſe Things, will be ſufficiently ſhewn hereafter. I ſhall therefore only in this Place lay down ſome general Directions,

which I hope will be of Uſe to all who practiſe among Horſes.

Firſt of all, Purging may be neceſſary in moſt or all *Plethorick Caſes*, eſpecially after an Evacuation has been made by *Blood-letting*, and the Body render'd ſomewhat cool and lightſome; for if a Horſe be purged when his Body is very full, it may, unleſs the other Secretions are alſo free, occaſion, during the Operation, a too great Hurry in the Blood's Motion, bred from too great a Quantity of Blood; or, by deriving too much Blood into the Inteſtines, may occaſion an Inflammation of the Guts. For the ſame Reaſon, Horſes that are *plethorick* and full of Blood, ought only to have mild Purges given them.

Secondly, Becauſe a Horſe can ſeldom or never diſgorge himſelf by Vomit; gentle Purging may therefore be allowed in Diſorders of the Stomach, before other Things are adminiſter'd.

Thirdly, Purging is the moſt neceſſary Remedy for all Foulneſs in the Guts, for the Expulſion of all viſcid, ropy Matter, and in all Caſes where a Horſe is infeſted with Worms.

Fourthly, It is a great Relief in Coſtiveneſs, eſpecially after ſuitable Clyſters have been firſt adminiſter'd. And it is moreover uſeful in all Scouring and Looſeneſs of the Belly, when perform'd by ſuch Medicines as afterwards conſtringe the Inteſtinal Glands. But in this Caſe many of the Tribe of purging Medicines may be very hurtful, and occaſion either a too great Relaxation of thoſe Glands, or an Inflammation of the Guts, by their too violent and harſh Operation.

Fifthly, In all Caſes where there is a groſs Habit, with a Tendency to Swellings in the Limbs, or any other Part of the Body, Purging is neceſſary: As alſo in humid and watry Diſeaſes. In Diſorders of the Liver, cauſing the Jaundice, and in many of the Diſeaſes of the Eyes, it does manifeſt Service, by the Revulſion it makes from thoſe Parts, and in moſt Ailments of the Head, where there is no Fever, but only a Stagnation in the Blood, in ſome of the ſmall capillary or Hair-like Arteries. For Purging in ſuch Caſes, not only drains off Part of the ſuperabundant Matter, but alſo, by putting the Blood into a briſker Motion, cauſes a Separation of its groſſer Parts, ſo that it moves with more Freedom and Eaſineſs in all its Canals, and is thereby brought more readily to the ſecretory Offices.

But

In Blooding and Purging, the Strength of a Horſe to be regarded.

But in this Operation, as well as in Blooding, a particular Regard ought to be had to the Strength of every Horſe, becauſe the Irritation that this kind of Phyſick makes in the Stomach and Guts, when it is poweful, occaſions ſuch diſorderly Agitations in the Blood and Spirits, as cauſe violent Sickneſs, attended with cold damp Sweats, and ſometimes convulſive Motions: And all this I have ſeen frequently happen to Horſes while under this Operation; and therefore they ought not only at that Time to be carefully look'd after, but their Phyſick ſhould be qualify'd with ſuch Mixtures as will prevent it from adhering too cloſely to any Parts of the Guts.

But what relates to this, and all other Operations, will, I doubt not, be perform'd to the Farrier's Satisfaction in the Sequel of this Treatiſe, where all thoſe general Rules ſhall be juſtly and methodically applied.

CHAP. VI.

Of the Fevers of Horſes in general.

The Sieur de Solleyſell's Opinion concerning a Fever.

MOST of thoſe who have treated of the Diſeaſes of Horſes, have defin'd a Fever to be a preternatural Heat of Blood; and the Sieur *de Solleyſell* has compar'd it to the "Ebullition of Wine in a Cask, where the Liquor being "agitated, heated, dilated, and fermented, and having no "Vent, breaks impetuouſly through all Obſtacles, ſpread-"ing its Steams and Vapours all around, and appears ſo "muddy, that we cannot diſcern the leaſt Drop of Wine "in the Veſſel. But after theſe diſorderly Motions, all "the Impurities that were in the Wine are ſeparated; the "Lees fall to the Bottom, a Sort of Scum floats on the "Top, and the Concavity of the Veſſel is covered with a "Sort of cruſty Subſtance". This Compariſon between the State of the Blood, and Wine thus pent up in the Cask, is, according to that Author, a true Idea and Repreſentation of a Fever, which, as it is obvious to Senſe, will, no doubt, ſatisfy a good many Readers; but yet, as the Agreement is only in ſome few Circumſtances, and not in the whole, I ſhall therefore give a ſhort Account of a Fever, as it is founded on the Structure of the Blood, and the Veſſels in the which it flows.

But firſt, it will be proper to diſtinguiſh between a Fever that is Simple, and that which is Complicated and accompanied with ſome other Diſeaſe. A ſimple Fever conſiſts only in the Increaſe of the Blood's Velocity; that is to ſay, when it runs more ſwiftly through all its Channels than is uſual, but preſerves an Uniformity in its Motion. Whereas a complicated Fever has, beſides the Increaſe of Motion in the Blood, ſeveral other Symptoms; and theſe Diſeaſes, which are Concomitants of ſuch Velocity in the Blood, are often the Cauſe of thoſe Fevers, in which the Motion of the Blood is not regularly and uniformly augmented, but is diſorderly, admitting of divers Periods.

A Fever explain'd.

The Blood, as all other Fluids, being made up of liquid Parts, is therefore capable of being put into a more than ordinary Degree of Motion, both by external and internal Cauſes: When the Cauſe happens to be ſimple and external, as for Inſtance, when the Blood is violently agitated and put in Motion by the Heat of the Sun, or by violent and exceſſive Exerciſe, then the Fever will be only ſimple: In ſuch a Caſe the Blood is melted, and, like Wax, requires more Space in the Veſſels, than when in its ordinary State; and likewiſe as it becomes more thin and fluid, its Motion increaſes; which is obvious enough, becauſe all thin Liquors will move with more Velocity and Swiftneſs than thoſe that are thick; and becauſe a Liquor that is of a thin Texture, will paſs through thoſe that are more large, without any Oppoſition; therefore all ſuch Fevers are regular and uniform. But when a Fever proceeds from any ill Quality in the Blood, as for Inſtance, if the Blood be too thick or viſcid, ſo as to occaſion Obſtructions in thoſe Veſſels that are the moſt minute and ſmall, the Blood being obſtructed there, and meeting with Oppoſition, muſt needs occaſion great Diſorders, while it flows in greater Quantity than ordinary into particular Parts, and while it endeavours to find out proper Vents and Paſſages for itſelf. Now in both theſe Caſes, the glandular Diſcharges muſt, in a great Meaſure, be hurt. But in thoſe Fevers that are complicated, ſome of thoſe Vents may be too much obſtructed, while others are too free and open. And hence it is, that Nature is ſo much put to it in all Fevers; for in thoſe that are the moſt ſimple, ſhe is overpower'd by a two great Quantity of Blood, occaſion'd by a too great Rarefaction, whereby it takes up more Space than uſual in all the

the Blood-veſſels, which moves with ſo much Rapidity as to diſcompoſe the whole Body. And in thoſe Fevers that proceed from vitiated Blood, and are the Effects of ſome other Diſeaſe, ſhe is oppreſs'd by violent Impulſes and irregular Diſcharges before the Blood can become of ſuch a Texture and Make as to render it fit to paſs equally into all Parts.

All Fevers have for their immediate Cauſe, either a too great Thickneſs or Thinneſs of the Blood, or an Inequality of its Subſtance.

And therefore it is to be obſerved, that whatever Changes the Blood undergoes in all the different Kinds of a Fever, ſo long as the Diſeaſe laſts, theſe Changes muſt have a Tendency either to an over-great Rarefaction or Thinneſs, or elſe to an over-great Thickneſs, or to an Inequality of the Subſtance of the Blood, whereby ſome Parts of it will paſs more eaſily than others through the ſmalleſt Veſſels ; all which may at one Time or other produce the Symptoms common to all Fevers, to wit, a violent and exceſſive Heat, and beating of the Arteries, *&c.* This is ſo clear and evident, in Caſe of an over-great Rarefaction and Thinneſs of the Blood, that it needs no Manner of Proof, ſince Heat muſt always be the Effect of Motion. And, on the other Hand, when the Blood happens to be too much coagulated and thicken'd, and when it is render'd of too adheſive and gluey a Nature, whatever be the Figure and Size of its Particles, or whatever other Qualities may be in it, it muſt certainly be obſtructed in the ſmalleſt Paſſages ; and theſe Obſtructions in the ſmalleſt Paſſages, muſt give it a more than ordinary Degree of Motion in thoſe Veſſels that are large enough to receive it, and conſequently its Heat muſt alſo be augmented.

In what Manner the Blood will cauſe a Fever when it is too thick.

But this will be the more eaſily underſtood, if we conſider that the Arteries, which carry the Blood into all Parts, grow gradually ſmaller, the farther they advance from the Heart ; and that there is a proportionably leſs Diſtance between their Branches, and towards their Extremities, as the Diſtance between theſe capillary Branches grows ſtill ſmaller, reſembling the little Filaments on the Leaves of Trees. It is alſo to be taken Notice of, that, according to the lateſt Diſcoveries, the Sum of all the Orifices of the ſucceeding Branches of every Artery, is larger than the Trunk from whence they ariſe, which muſt be ſo great a Benefit to Nature, that unleſs

thoſe Veſſels had been of ſuch a Texture, it would have been impoſſible for any animal Body to have been ſupported under the leaſt Diſorder. But notwithſtanding this wiſe Contrivance, the Blood is ſtill very liable to Obſtruction whenever it happens to be too thick or viſcid. And as all ſuch Obſtructions muſt rationally happen in thoſe Parts where the Veſſels are of the ſmalleſt Texture, that which flows in thoſe that are larger, muſt of Conſequence move with greater Rapidity; becauſe, as has been already hinted, when it meets with Oppoſition in its Courſe forwards, it muſt deviate in greater than ordinary quantity, and with greater Force, into the neareſt lateral Branches.

An Obſervation taken from Water running in Pipes, &c.

Nature furniſhes us with few Similitudes that would be of any Service to illuſtrate this ſort of Mechaniſm, unleſs a general Reſemblance could be ſufficient. Neither does Art aſſiſt us otherwiſe than by Mathematical Experiments, which would not be eaſily underſtood but by thoſe who have ſome inſight into them. But that this may be made as plain as poſſible, we ſhall ſuppoſe an Artery to be like a Pipe, which grows gradually ſmaller, according to the number of Branches it ſends forth. We muſt alſo ſuppoſe this Pipe, and all its Branches, to be conſtantly filled with Water from ſome Fountain, and this Water perpetually running from the main Trunk into all theſe Branches: We muſt in like manner imagine the Extremities or Endings of thoſe Branches to be ſo ſmall, as to be eaſily choak'd up with Sand or Clay, or any other kind of Matter; and therefore when any ſuch Matter happens totally, or in part, to obſtruct one or more of theſe ſmall Paſſages, the Water meeting with Reſiſtance is forced back again, and is taken up by thoſe Branches that are the neareſt; ſo the Branches, which are antecedent to thoſe that are thus obſtructed, receive not only a more than ordinary quantity of Water, but this Water is alſo increaſed in its motion in proportion to the Force by which it is repuls'd; and likewiſe by that of the Water, which is antecedent to it, which being alſo in Motion, muſt reſiſt its returning the ſame way it came; and, by giving a new *Impetus* to the Water thus repulſed, muſt drive it with the greater Force into the lateral Branches. And this will appear ſtill more manifeſt from the Inſtance of a large Stone thrown into a very ſmall Brook or Rivulet, which taking up ſome Space, and dividing the Stream in the middle,

middle, the Water that runs on each Side will move with greater Rapidity than that which is either before or behind.

From all which it is evident, that Obſtructions in the ſmall Capillary Arteries, as they are the Cauſe of a greater and more violent Motion of the Blood in thoſe that are larger, muſt occaſion a Fever; but eſpecially as ſuch a Motion may bring on a ſubſequent Rarefaction in the Blood; becauſe whatever agitates the Blood, and puts it in a more than ordinary degree of Motion, muſt occaſion more frequent Contractions of the Heart, and alſo of the Arteries, whereby the Blood muſt, without doubt, be comminuted, and its Parts render'd more ſmall. In like manner an overgreat Rarefaction may be the Cauſe of a Coagulation of the Blood; that is, when the Blood happens to be too much rarefy'd, as in the beginning of a legitimate Fever, the thin *Serum* being expended in a greater than ordinary quantity, will leave the remaining Maſs thicker, and more unapt to motion, whereby ſeveral Changes and Alterations may be reaſonably expected: And now ſince the Extremities of the Veins, which communicate with thoſe of the Arteries, are but little different from the Arteries themſelves, ſave only that they take a contrary Courſe, and that the Blood moves in them backwards towards the Heart; whereas in the Arteries it moves from the Heart towards the Extremities: And as the motion of the Blood in theſe ſmall communicating Branches of the Veins, is chiefly owing to a continual Succeſſion of Blood from the Arteries, when once therefore it gets into them, its Motion cannot be eaſily retarded, unleſs in the Extremities of the Limbs, where its aſcent upwards muſt, no doubt, be a great hindrance to it. And this is the Reaſon why, in ſeveral Kinds of Fevers, eſpecially in thoſe where the Blood happens to be of unequal Compoſition, *viz.* when it is thicker in ſome Parts than others, the Pulſation of the Arteries muſt alſo be unequal; becauſe while its groſſer Parts are detain'd in the ſmalleſt Veins and Arteries, the Blood muſt move with more Velocity in ſome of the other Veſſels, for the Reaſons already alledg'd; but as ſoon as this Lentor has work'd it ſelf into the more capacious Veins, which grow wider the nearer they approach the Heart, and that a thinner and more attenuated Blood ſupplies its Place in thoſe ſmall Branches, then the Pulſation becomes more moderate and uniform, and the Fever is remov'd, at leaſt for that Seaſon.

But

But in all Fevers whatſoever, it is manifeſt, that the various Changes made in the Blood, whether theſe are cauſed by an over Rarefaction and Thinneſs, or an over Thickneſs, muſt affect the Secretions; but in thoſe that are complicated, they muſt occaſion ſome of them to be too liberal, while others are too ſparing; and may alſo occaſion one Secretion at one time to be too open, and at another time too ſparing.

How the Secretions may be affected in Fevers.

And thus far we may here advance concerning the Secretions, that in all ſuch Fevers as proceed from an over Rarefaction, the ſerous Part of the Blood, being render'd more than ordinary thin, muſt needs go off in too great a Quantity, while the groſſer Parts may be detained by the larger Veſſels, which compoſe the ſolid Parts, preſſing upon thoſe that are ſmaller, eſpecially towards their Entrance into the Glands; ſo that by virtue of a ſuperior Weight in the larger Veſſels, nothing but the thinner Parts of the *Serum* can paſs through them; and that Expence of the thinner Parts of the Blood, if it is not ſtopped in due Time, will leave the remaining Maſs too thick, whereby other Symptoms will be engender'd, and ſuch as are common to Fevers of a more complicated Kind: And when ſuch a Change happens, the Blood muſt loſe its regular and uniform Motion, and the Diſeaſe will no longer conſtitute one continued Fever, of one Period only, but admit of divers Periods.

Now when ſuch a Change happens in any ſimple and continued Fever, or if this has been the State of the Fever from the Beginning, the Secretions muſt be irregular; for ſeeing the Entrance into all the Glands is not the ſame, but that theſe Paſſages are of divers Capacities and Sizes, the Parts of the Blood and *Serum* not being ſufficiently comminuted, and render'd ſo ſmall as to enter into the ſmalleſt ſecretory Offices, muſt therefore, when they meet with Oppoſition, and are deny'd Admittance into them, enter in an over-great Quantity into thoſe that are large enough to receive them. And thus we may eaſily form an Idea how ſeveral Ferments may be engender'd in the Body during the Continuance of ſuch Fevers, eſpecially if it be conſider'd, as was obſerved in another Place, that a Liquor conſiſting of but few Principles, may, by their various Combinations, produce a great Variety of different Liquors. And therefore ſince the Blood is a Fluid conſiſting of different Principles, and undergoing ſo many different Changes, while its Secretions are thus diſtemper'd and irregular, it may, no doubt, be ſo ferment-

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ed by its various Mixtures, as to occaſion all thoſe evil Symptoms, which are diſcovered in the animal Body, while Nature is endeavouring to throw off what is offenſive and burdenſome to her.

After this ſhort Account of Fevers in general, it follows that we take Notice of their ſeveral Kinds, as they have been diſtinguiſhed by their different Names and Appellations, wherein we ſhall deviate as little as poſſible from the Method of thoſe who have gone before us; that ſuch as have been uſed to the Writings of *Solleyſell*, *Markham*, or any other of that Tribe, may not be too much bewilder'd by the Peruſal of what they ſhall here find new upon the Subject.

The different kinds of Fevers.

We have already divided a Fever into that which is ſimple, and of one Period only, and that which is complicated and accompanied with ſome other Diſeaſe. Under which Diviſion may be reduc'd all Sorts of Fevers; but a ſimple Fever ſtands ſingly by itſelf, and is that which, properly ſpeaking, conſtitutes a true Fever; and therefore all Fevers may be termed more or leſs *ſimple*, as they are made up of fewer or more Symptoms; for the fewer Symptoms there are in any Fever, any ſuch Fever will be the more ſimple, and will approach the nearer to that which conſiſts only in the regular Augmentation of the Blood's Motion: And, on the other Hand, the more Symptoms there are in any Fever, it will be the more complicated, and participate the more of other Diſeaſes. All therefore that ſhall be ſaid concerning the particular Fevers of Horſes, ſhall be reduced to thoſe that are *Simple* and *Continued Fevers*, *Hectick Fevers*, *Putrid Fevers*, and thoſe that are called *Peſtilential Fevers*; and laſtly, all ſuch as are intermitting, whether theſe be *Quotidian*, *Tertian*, or *Quartans*. As for thoſe proper to the Seaſons, *viz.* the Autumnal and Vernal Fevers, *&c.* which *Markham* has taken Notice of, they may be reduced to one or more of the above-mention'd Kinds, tho' perhaps not with Reſpect to their whole complex Symptoms, and indeed in that Senſe there is no Fever directly the ſame, but may vary in ſome Circumſtances: For ſeeing the Bodies of all Animals are numerous, and are infinitely compounded, and made up of Veſſels which are infinitely different in Size and Magnitude; and as the Fluids contain'd in theſe Veſſels are capable of different Changes and Modifications, it cannot therefore be expected, but the ſame Kind of Fever may have different Symptoms in one Horſe from what they are in another; and

and this Variation may be in Proportion to the Size and Make of the conſtituent Veſſels of different Horſes, *&c.* But if the Farrier will only endeavour after a competent Skill in the animal Oeconomy, he will be the better able to ſuit his Methods of Cure to the ſeveral Indications that may proceed from any ſuch Variety.

CHAP. VII.

Of a ſimple continued Fever.

A ſimple legitimate Fever.

THIS Sort of Fever is not the leaſt common among Horſes, neither is it very difficult, but may be eaſily cured, eſpecially in the Beginning. It conſiſts in an equable Augmentation of the Blood's Velocity, as has already been obſerved, and may proceed from divers Cauſes: As *Firſt*, From riding in very hot and dry Weather, for by that Means the Blood being once ſet in Motion, it thereby becomes rarefy'd, and the external Heat contributes to keep up both the internal Heat and Rarefaction thereof.

The Cauſes thereof.

Secondly, This Fever is ſometimes brought on Horſes by turning them out to Graſs in hot and dry Weather, and into ſmall Incloſures, where there is but little Air, and where there is not ſome convenient Shade to cover them from the ſcorching Heat of the Sun.

Thirdly, The eating hot and ſpirituous Herbs, or other Food, that communicate too great a Heat and Warmth to the Blood (eſpecially until a Horſe has been habituated to ſuch Feeding) will be the Cauſe of ſuch a Fever.

Fourthly, This Sort of Fever is ſometimes cauſed by bleeding Horſes in the Heat of the Sun in the hot Seaſon, without houſing them; becauſe during the Time of the Operation, the Blood is put into a greater Motion than before; and that new Motion is further increaſed and kept up by the additional Heat of the Weather, as has been obſerv'd: And this may be illuſtrated by the common Effects of Fire under a Pot or Kettle, where the Heat of the Water increaſes more in the ſame Spaces of Time, according to the Degrees of its Motion, though the Fire be not increaſed.

Fifthly, External Cold will ſometimes bring on ſuch a Fever, by hindring Perſpiration, eſpecially when its Effects are ſudden; for in ſuch a Caſe the Quantity of the Blood muſt be ſuddenly increaſed, and that Increaſe will be followed by an immediate and ſpeedy Rarefaction of the Blood.

And

How Cauſes and Effects are to be diſtinguiſhed.

And here it is to be obſerv'd, with reſpect to Cauſes and Effects, that the ſame Cauſe will ſometimes produce different Effects; and the ſame Effect will often proceed from different Cauſes, as in the Inſtance laſt mentioned: For Cold, when its Effects are ſudden and univerſal, will cauſe a ſudden Rarefaction in the Blood, by obſtructing moſt of the Paſſages of Perſpiration; but when it is partial or gradual, it will have a different Effect. But the different Effects which we obſerve from the ſame Cauſe, or the ſame Effect proceeding from ſeemingly oppoſite Cauſes, may only ariſe from the different Degrees of Efficacy in the Cauſes themſelves, whereof we cannot be exact and competent Judges, eſpecially as they are exerted on the animal Body, which is infinitely various in its Compoſition and Structure; and moreover as theſe Cauſes are alſo complicated; and therefore when we ſpeak of different Effects proceeding from the ſame Cauſe, and *vice verſa*, of the ſame Effect proceeding from different and oppoſite Cauſes, we are to be underſtood, not in an abſtracted philoſophical Senſe, but as this is moſt obvious to our common Apprehenſions of Things; which Difference we ſhall endeavour to account for in the moſt rational Way we are able, and that as often as we ſhall find Occaſion.

But, *Laſtly*, If the Affections of Horſes can be enough permanent and laſting, ſo as to bring on Diſeaſes, according to ſome Writers, ſuch a Fever, as this we are treating of, may take its Beginning from Rage and Fury, ſince nothing contributes more to the Rarefaction of the Blood, and the Increaſe of its Motion. And therefore thoſe Horſes who have felt the Pleaſures of Love, and have been afterwards reſtrained from Copulation, but yet have had Mares frequently expoſed to them, muſt be moſt in Danger from ſuch Cauſes.

The Signs of a ſimple Fever.

But we ſhall now proceed to the Signs, which in a ſimple and continued Fever are violent Heat and Fulneſs of the Veſſels, which will even appear to the Eye; a Beating of the Heart and Flanks without Intermiſſion; a Dryneſs on the Roof of the Mouth and Palate, with a Roughneſs on the Tongue; continual Watchfulneſs and Reſtleſſneſs, inſomuch that if a Horſe be ſeized in the Field, he will be perpetually moving from Place to Place, going often to the Water, but not being able to drink, he will ſmell at the Ground in many Places without Feeding, but diſcovering a great Delicacy from the

Want

Want of Appetite: And if a Horſe in ſuch a Condition happens to be in the Stable, the ſame Signs will alſo be apparent; and he will moreover be apt to ſtrike at any one that comes near him, tho' at other times tractable and eaſy.

In what manner theſe are to be diſtinguiſh'd.

But here I muſt alſo take Notice, as concerning the Signs, that nothing is more carefully to be look'd into than they, becauſe the ſame common Signs are often exhibited in Diſeaſes that are different, and require a different Method of Cure. But this is not ſo conſpicuous in other Diſtempers as in Fevers; for which Reaſon the Farrier muſt always have Recourſe to the Cauſes, whereby he will be the better able to form a Right Judgment; and that this may become the more eaſy to him, we ſhall go over thoſe Signs more particularly, as they ariſe from common Effects, but are produc'd of their proper Cauſes, and may therefore be diſtinguiſh'd from the ſame Appearances in more complicated Fevers.

Firſt then, it may be obſerved, that Heat, and beating at the Heart and Flanks, is a Sign common to all Fevers. But in a Fever that is ſimple, the Heat is permanent, and the Pulſations regular; whereas in a Fever that is complicated, neither the Heat nor Pulſations are regular, but are ſometimes more, ſometimes leſs obſervable; and in ſome, as in Intermitting Fevers, the Diſeaſe goes quite off, and only returns at certain Times.

Secondly, In a Simple Fever, the Dryneſs on the Roof of the Mouth and Palate, and the parch'd Roughneſs of the Tongue, are perceivable from the firſt Appearances of the Diſeaſe, as they proceed from an over-great Expence of the thinner Parts of the *Serum*; but in other Fevers theſe Signs are not ſo ſuddenly exhibited.

Thirdly, Tho' other Fevers may be accompanied with Want of Appetite, yet this Sign ſeems more peculiar to ſimple Fevers, being the conſtant Effect of an over-great Rarefaction and Thinneſs of the Blood, whereby it takes up more Space in all the Veſſels of the Stomach, even ſo as ſometimes to occaſion Inflammation; and this Diſtention of the Veſſels muſt take off the Senſation of Hunger, and create a Loathing, which is alſo the Reaſon why, notwithſtanding that the Heat and Parchedneſs make a Horſe thirſt often in this kind of Fever, yet he drinks but little at a Time.

Fourthly, The ſame Plenitude of the Veſſels in the Stomach, as alſo in the circumjacent Parts, *viz.* the *Pleura*

and

and *Midriff*, and moreover in the Lungs themſelves, is the Cauſe of the heaving of the Flanks, whereby the Lungs are depreſs'd too cloſe on all Sides, upon which the Paſſages of Reſpiration become obſtructed; whereas in other Caſes, the ſame Signs may be exhibited from the want of Spirits, by which means the Action of the Muſcles, which elevate and depreſs the *Thorax*, muſt be hinder'd; but this may be eaſily diſtinguiſh'd, by an Inſenſibility and Liſtleſneſs to Motion; as may alſo an Inflammation of the Lungs or *Pleura*, from the manifeſt Signs of inſupportable Pain, as ſhall be obſerv'd in its proper Place.

Fifthly, Albeit Pain is a Sign common to ſeveral kinds of Fevers, yet it is more violent in this than in any other, as the Pain proceeds from an over-plenitude and fulneſs of the Veſſels; and therefore when we obſerve a Horſe apt to ſhrink or ſtrike, as often as any one comes near him, but eſpecially upon offering to touch his Back, we may ſuppoſe this to be occaſion'd from Pain in the Back and Loins, ariſing from an over-diſtention of the *Aorta*, or great Artery, that Veſſel lying open and unguarded, and having no ſtore of Muſcles to inviron and ſupport it. The Farriers oftentimes, in this ſort of Fever, when they obſerve a Horſe unwilling to have any one lay Hands on his hind Parts, believe it to be the Sign of a ſway'd Back, and make their Applications accordingly. But we ſhall have an Opportunity of putting them right in this Particular hereafter.

Laſtly, The conſtant Watchfulneſs and Reſtleſneſs, which is ſo obſervable, and ſeems, in a great meaſure, peculiar to a ſimple Fever, is alſo the Reſult of a very great Rarefaction and Thinneſs of the Blood; the animal Spirits will therefore be the more eaſily ſeparated from ſo looſe a Texture, and the Veſſels, being at the ſame Time full, muſt therefore preſs upon the Nerves, cauſing a continual flux and reflux of the ſaid Spirits, from whence muſt undoubtedly proceed Watchfulneſs and Reſtleſneſs. But in Fevers of another kind, theſe Signs ſeldom or never go together; but if a Horſe be watchful, he is, perhaps, at the ſame time ſluggiſh and heavy; or if a Horſe be reſtleſs, and ſometimes in a moving Poſture, he does not continue long ſo, but becomes dull and unactive by Intervals, eſpecially if the Blood is of unequal Fluidity; for in ſuch a Caſe, when the viſcid and tenacious Parts are got into the ſmall hair-like Veſſels of the Brain, there muſt at that time

be

be a very ſmall Quantity of animal Spirits ſeparated from it; but when the more fluid Parts take Place in thoſe Veſſels, perhaps an overgreat Quantity may be ſecerned, and then the Diſeaſe will reſemble that of a ſimple and continued Fever, excepting only that theſe Symptoms are not, as in a ſimple Fever, of any long Continuance, but ſoon change into others. And therefore ſince the ſame Diſeaſe will often put on different Appearances, the Farrier can never be too careful in examining into every Circumſtance, that he may not raſhly adminiſter his Cures upon every ſlight Obſervation, as is too common, but wait till the Diſtemper gives Indications of what is truly neceſſary to be done.

Having thus laid down the Cauſes and Signs of a ſimple and continued Fever, together with the Way and Manner by which it may be diſtinguiſh'd from other Fevers, it remains that we go on to the Method of Cure, wherein we are principally to obſerve, that ſince there can be no Accidents in this Sort of Fever but what depend upon the Augmentation of the Blood's circular Motion, and while in this State, the Blood is not ſuppos'd to be any wiſe, or, at leaſt, but little vitiated; thoſe Things are only to be done, or adminiſter'd, that will leſſen the ſaid Motion, and bring the Blood to a more quiet and ſedate State; and, in order thereunto, Blooding is, in the firſt Place, to be preferred. After Blooding, Recourſe muſt be had to Clyſters, and to all ſuch Things as will juſt keep the Body cool and open, for by this Method alone a ſimple Fever is to be cured.

The Cure of a ſimple Fever.

Firſt, As to the Blooding, if it be in Summer, while the Horſe is at Graſs, he ought to be hous'd; and if the Symptoms are not very urgent, the Cool of the Morning is the beſt and propereſt Time for the Operation, becauſe the external Heat contributes very much to the Increaſe of this Diſtemper, or may be the principal Cauſe of it after Blooding, as we have already obſerv'd, becauſe of the Blood's being put into a quicker Motion during the Operation: But this ought not to deter the Practitioner, for if a Horſe be kept cool after it, any Symptoms that can ariſe from it will ſoon ceaſe, and will be quickly follow'd by a ſlower Motion in the Blood; and this is manifeſt, becauſe we often obſerve ſuch Fevers, eſpecially in Horſes of a rare and delicate Make, terminate in an Hemorrhagy of Blood.

His

His Feeding muſt be moderate during the whole Courſe of his Sickneſs; for indeed nothing contributes more to the leſſening of this Diſtemper than Abſtemiouſneſs; and what Food is given him, ſhould be mix'd with the Leaves of Vines, Strawberries, and Sorrel, and ſuch other Things as are cooling; for if the Fever be very ſtrong upon him, nothing will reliſh but what has a grateful Coldneſs in it. The ſame Kind of Things may be alſo boil'd in Water, with a little Oatmeal ſtrow'd upon it, for his ordinary Drink; and ſometimes two or three Drams of *Sal Prunellæ*, of purify'd *Nitre*, may be diſſolved in his Water, which, during the Fever, ought to be always warm.

For the Heat and Dryneſs of the Mouth, ſo much Vinegar or Verjuice, mix'd with ſome Water, as will give it a grateful Souriſhneſs and Roughneſs upon the Palate, ſweetned with Honey, will be very proper. The beſt Way to uſe it, is by dipping a Rag tied round the End of a Stick, into this Liquor, with which the Tongue and Roof of the Mouth may be cooled, and gently rubb'd ſeveral Times in a Day. A feveriſh Horſe will hereby be much refreſh'd and diſpos'd to Reſt and Quiet; but if thoſe Parts are become cruſty and very hard, the Vinegar or Verjuice may be uſed without the Mixture of Water.

If the Practitioner obſerves the ſick Horſe to be coſtive, which is very common in this Kind of Fever, and proceeds from the ſame Cauſe that occaſions Heat and Dryneſs of the Mouth; the Horſe's Body muſt then be opened by ſome emollient Clyſter, for purging Drenches are in this Caſe of dangerous Conſequence; becauſe while the Blood is thus violently in Motion, a *Stimulus* made in the Guts by a Medicine of a rough Operation, will be apt to determine the Blood into thoſe Parts in an over-great Quantity, ſo as either to occaſion a Super-purgation, or an Inflammation, which may be followed with a Gangrene.

But in all ſuch Caſes, before Clyſters are adminiſter'd, the Farrier ſhould firſt (his Hand and Arm being anointed with Oil or Hog's-lard) take the Horſe, and bring out as much of the harden'd Excrements as he can conveniently come at, after which he may inject his Clyſter, for which every Farrier ought to provide a large Syringe, a Horn being but of little Uſe, as it ſeldom conveys the Clyſter further than the ſtreight Gut; and becauſe the Guts of a Horſe are not only very large, but of conſiderable Length,

even from the undermoſt Valve downwards, the Quantity ought at leaſt to be two Quarts, for otherwiſe it muſt have but little Efficacy, unleſs it be made up of ſuch things as are of very powerful Operation, which are but ſeldom to be meddled with, and then in ſome very uncommon Caſes.

And therefore the Clyſters that are to be made uſe of in ſimple Fevers, ought to be compos'd of emollient Herbs or Flowers, ſome few Seeds that are proper to rarify and expel the Wind; by which Means the Dung becomes looſe, and falls off the more eaſily from its Adheſions. A moderate Quantity of Oils, or any other greaſy Subſtance, which contributes alſo to the ſame Purpoſe, by lubricating thoſe Paſſages, and rendring them glib and ſlippery; and when a *Stimulus* is required, a purging Medicine of more or leſs Efficacy may be mix'd with it, as ſhall be judg'd neceſſary, according to the following Method.

" Take Mallows and Marſh-mallows, of each a large " handful, Camomile half a handful, Fennel-ſeeds bruis'd " three Drams, or half an Ounce, boil them in three Quarts " of Water till one Quart be conſumed, ſtrain the Decoc- " tion through a Sieve, and diſſolve in it three Ounces of " Lenitive Electuary, and a Quarter of a Pound of Hog's, " lard, Oil, or Butter." This muſt be given blood-warm, holding the Tail cloſe to his Fundament. If there be Signs of Inflammation in the Guts, which may be ſuſpected when the Fever is very ſtrong, the Excrements exceeding hard and black, and when the Horſe ſtrains often to dung, and is in miſerable Pain withal; in ſuch a Caſe may be added an Ounce and a half, or two Ounces of the *Sal Polychreſtum*, which will diſſolve in the Decoction; or an Ounce of *Cream of Tartar*, and two Drams of *Salt Petre*, or *Sal Prunellæ*; theſe will not only allay the Heat, but make the Clyſter ſomewhat more purgative.

This Clyſter may be repeated once a Day, or, at leaſt, until the Fever abates, or that the Horſe becomes orderly in his Body.

It may be obſerv'd, as to the Compoſition of ſuch Clyſters, that any of the emollient Herbs, as *Pellitory*, *Mercury*, &c. or the Flowers and Leaves of Melilot, the Leaves of Violets, and in the room of Fennel-ſeeds, thoſe of Dill, Aniſe, and Caraways, may be ſubſtituted, and will ſuit the ſame Intentions. Broths may be alſo ſubſtituted in the room of ſuch Compoſitions, eſpecially when theſe Ingredients cannot be had in due Time.

But

But if a Clyſter of more immediate Efficacy be requir'd, a Handful of common Salt may be added; or inſtead of the Lenitive Electuary, three or four Ounces of the Vomiting Wine, known by the Name of *Vinum Benedictum*, may be mixed with the Decoction; but theſe Alterations will ſeldom be neceſſary, unleſs to Horſes who are very hard to be work'd on; there being nothing farther required by Clyſters in a ſimple Fever, than keeping the Body moderately open, that Nature may have her free Courſe, and not ſuffer by Obſtructions in the firſt Paſſages.

Care muſt alſo be taken to keep the Pores open by conſtant Dreſſing, tho' that ought not to be more than what is uſual at other Times; neither ſhould his Cloathing be augmented, or any Thing be given that will ſuddenly promote Sweat; becauſe moſt, or all ſuch Things, are apt to caſt off the thinner Parts of the *Serum* only; and a Fever that is truly ſimple, ſeldom ends by any of thoſe Diſcharges, but wears off inſenſibly by a gradual Abatement; and it is to be obſerv'd, that a ſimple Fever, as ſuch, is but of ſhort Continuance, and in a few Days either begins to wear off in the Manner juſt mentioned, or elſe it puts on other Appearances; and if it gives Signs of Concoction, either by Urine, or by a Tendency to ſweat, it is no more to be treated as a ſimple Fever, but as one that is more or leſs complicated; and then Medicines that promote Sweat are very proper, ſuch as will be preſcrib'd in the enſuing Chapter.

CHAP. VIII.

Of a Putrid Fever.

AS the Fever we have treated of in the foregoing Chapter is ſimple and uniform, that which comes here under our Conſideration is of a complicated Kind; and, for the moſt Part, proves fatal to Horſes; for as in a ſimple Fever there is only a Rarefaction of the Humours, in this there are, beſides the Augmentation of the Motion of the Blood, ſome evil Qualities ingender'd in it, which require a conſiderable Time before they can be removed, and during the Continuance thereof, Nature oftentimes ſinks under her Burden; and the greater muſt be the Danger in brute Creatures, as they are not under the Guidance of Reaſon.

The Cauſe of a Putrid Fever.

Putrid Fevers, and all Fevers of a complicated Kind, are more incident to young Horſes, than thoſe who are advanc'd to their Prime; and to ſome more than others even in their Coltage, which, according to the beſt Authors, is, by reaſon the Blood of all young Animals is apt to be of unequal Fluidity, as not having been ſufficiently commuted by frequent Circulations thro' the Lungs; therefore it will be the more ready upon any Change, either to putrify, or, at leaſt, to put on the Appearances of Putrefaction. And as the Appetites of young Horſes are ſtrong and vigorous, they are apt to over-gorge themſelves, and oftentimes too with unwholſome Food, begetting Crudities in the Stomach, by which Means the Chyle is contaminated, and the Blood, for the moſt Part, render'd more groſs and viſcid. This alone is ſufficient to bring on a putrid Fever; but more eſpecially if a Horſe happens to be put to violent Labour, or hard Riding, before his Body is prepared for it, either by moderate Feeding, moderate Exerciſe, or proper Phyſick; for when the Blood is once put into a more than ordinary Motion, while in this unactive State, any one muſt then eaſily conceive what great Diſorder muſt needs happen to that Animal.

Cold taken abroad in the Night, or in unwholſome, foggy Weather, (when a Horſe has been us'd to warm and delicate Keeping) will, by ſtopping the Paſſages of Perſpiration, bring on ſuch a Fever, eſpecially where there is a groſs Habit; for in ſuch a Caſe the Blood cannot be ſo ſuddenly rarefy'd, as to conſtitute one of a more ſimple Kind; and the ſame may happen from ſeveral other Cauſes, which I ſhall not detain the Reader with at preſent.

The Signs.

The Signs are thoſe which it has in common with all other Fevers, to wit, inordinate Heat, a Clammineſs and Parchedneſs in the Mouth, a Heaving and Beating of the Flanks; but this is not regular, as in a ſimple Fever, but is ſometimes more, ſometimes leſs, according as the Fever is more or leſs upon him; and whereas in a ſimple legitimate Fever, a Horſe is watchful and reſtleſs, in this he is, for the moſt Part, unactive and dull, hangs his Head, takes no Notice of any one that comes near him, his Body ſhakes and quivers, and he reels as he offers to walk; and this proceeds from a Paucity or Oppreſſion of the animal Spirits.

In

The Cure of a Putrid Fever.

In order to the Cure, the ſame Evacuations are to be made as is uſual in a continued Fever, *viz.* Blooding, and purging by Clyſters; for as in a ſimple Fever the Blood may be render'd more thick by leſſening the Quantity thereof; ſo in a putrid Fever alſo the Blood becomes more attenuated and thin, by having more Room given it in the Veſſels, whereby its Motion becomes alſo more uniform; ſo that ſomewhat muſt of Conſequence be abated from the Diſtemper: But yet as it is groſs and viſcid for the moſt Part, it will be apt to require more frequent and repeated Circulations, than perhaps can be performed without waſting and deſtroying the Body, to bring it into ſuch an equable Mixture, as is neceſſary to Health; and therefore, beſides theſe Univerſals, ſuch Things ought alſo to be adminiſter'd, as may conduce to the attenuating the Blood, and help to bring it to ſuch a Texture and Make, as will render it fit to paſs equally into all its proper Channels, and from thence to have its morbifick Matter thrown off in ſuch Proportions, and by ſuch Secretions, as are moſt agreeable to Nature.

For which Purpoſe, all ſuch Things as promote the Diſcharges by Sweat and Urine are very proper; and therefore when a Horſe labours under this Fever, purify'd *Nitre*, or *Sal Prunellæ* ſhould be diſſolved in his Water, or that ſo much recommended by the Sieur *de Solleyſell*, which he calls a *Febrifuge*, may be given him to drink, *viz.*

" Put a Quart of Water, with two Ounces of Salt of " Tartar, in a Brazen Pot, with a Cover, and ſet it over " the Fire till the Salt be diſſolved, then pour the Water " into a Pail, and after the ſame Manner diſſolve an Ounce " of *Sal Armoniack* beaten to Powder in another Quart " of Water; mix this laſt Solution with the former, and " fill up the Pail with common Water; and if your Horſe " refuſe to drink it, add a little Barley-flower, to qualify " the unpleaſant Taſte." This will not only help to allay the exceſſive Heat, but contribute to promote both Sweat and Urine.

But if there be Signs of Concoction, which may be diſcover'd by an Increaſe of the Fever, and by a Cloud or Sediment in his Urine, which may be preſerv'd in a glaz'd Pan for that Purpoſe; then the following Cordial may be given him.

" Take of the diſtill'd Waters of Carduus, Scabious, " and Marigolds, three Pints; or inſtead of them, the ſame " Quantity of Milk-water, which may be had of an *Apo-* " *thecary*, and will anſwer the End as well; diſſolve in it " an Ounce of Mithridate, and give it in a Horn, after " which let him be well cloath'd; and when he begins to " ſweat plentifully, let him have a Draught of warm Wa- " ter, with a ſmall Mixture of White-wine in it".

During the whole Courſe of the Fever, a Horſe ought to be well rubb'd, that the Paſſages of Perſpiration may be kept as free and open as poſſible; and that the Blood, which is apt to languiſh in the ſmall Veſſels towards the Skin, may be forwarded. Care ought alſo to be taken of his Mouth, to keep it clean and moiſt, according to the Method already laid down.

And becauſe a Horſe cannot vomit by convulſive Throws, as ſome other Animals, yet as Vomiting is proper, not only in this, but in moſt or all complicated Fevers, thoſe Helps which the Practice of experienced Farriers have ſubſtituted may be made Uſe of; and therefore half an Ounce of *Aſſa Fœtida*, and the ſame Quantity of *Savin*, put up in a Rag, may be tied to his Bit, Polipody of the Oak, green Juniper-wood, Horſe-radiſh, or any thing elſe that is of a hot and ungrateful Taſte, faſtened to his Bit, will have the ſame Effect. This may be done for the Space of an Hour once a Day, eſpecially in the Beginning of the Fever, which will anſwer ſome of the Intentions of Vomiting. For by ſtraining to cough, vomit, and ſneeze, which happens on the Uſe of ſuch Things, the whole Body is actuated and ſhook, and thereby a great deal of *Lentor* may undoubtedly be ſqueez'd through the ſmalleſt Veſſels, which cannot but be a great Relief, and may often bring the Diſeaſe to a more ſpeedy Solution. But altho' chewing Balls, *&c.* may be thus uſeful in a Fever, where there is a *Lentor* and Slowneſs of the Blood in the ſmall Arteries, yet they cannot be proper in a ſimple and legitimate Fever, notwithſtanding they have the Authority of *Solleyſell* to ſupport their Uſe: Becauſe ſuch ſtraining may have a Tendency to ſtir the Blood too much, which is ſuppoſed to be in an over-great Hurry already.

Laſtly, If the Fever ends with a Defluxion of Rheum from the Mouth and Noſe, as is not very uncommon in ſuch Caſes; " Boil a Handful of Red-roſe Leaves in a " Quart of Water; and when the Decoction begins to " cool,

" cool, diſſolve it in an Ounce of Diaſcordium, to be " given as a Drench. This, being repeated for two or " three Days ſucceſſively, will digeſt that Humour, and " dry it up by degrees.

CHAP. IX.

Of Peſtilential Fevers.

UNDER this Title may be included all thoſe kinds of Fevers that have a high degree of Malignity in them, and of ſuch are many of the Sickneſſes peculiar to ſome Seaſons. But when they amount to a Plague or Murrain, the whole Maſs of Blood becomes ſo ſuddenly vitiated, that they generally prove mortal before any Helps can be given them, there being no time left for their due Operation of the common Means.

The Cauſe of Peſtilential Fevers.

Thoſe which are of the ordinary Kind differ only in degree from other malignant Fevers, having in common with them the ſame Lentor of Blood, and oftentimes proceed from the ſame Cauſes, as the eating of unwholſome Food, but eſpecially ſuch Herbs as are of a cold, viſcid Nature, and are therefore apt to beget Crudities; or from the Exceſs of Exerciſe upon a full Body, and the like, which, in the Proceſs of the Diſeaſe, brings on Symptoms that bear an affinity to thoſe which are obſervable in the Plague. But when the Plague actually ſeizes Horſes, the Effects are ſo ſudden, that it can be attributed to no other Cauſe than ſome Diſtemperature in the Elements, or Infection from thoſe who are already ſeiz'd with the Diſtemper; and whatever be the Nature of thoſe Infections, whether they proceed from corroſive Ferments, or from any other Cauſe, their Operations are ſo ſudden, that they ſeem to bring the Blood into an immediate, and almoſt univerſal Stagnation, which Effects may be accounted for in the ſame manner as is uſual in the Operation of Poiſons; and, excepting in ſome few Circumſtances, require the ſame Method of Cure.

The Signs.

As for the Signs, they are not unlike thoſe of putrid and malignant Fevers, only that there is a great Stupidity, and, for the moſt Part, a Swelling and Inflammation of the Kernels about the Throat, proceeding from a Stagnation of the Juices in thoſe ſmall Veſſels; and when the Diſeaſe is very violent, a vaſt Quantity of

Water runs from the Eyes, and a yellowiſh Matter diſtils from the Noſe, and ſometimes from the Mouth alſo, being ſometimes ropy and mix'd with Blood; the Eyes are likewiſe inflam'd, and a clammy Sweat hangs on his Ears.

The Cure. As to the Cure, becauſe this Diſtemper, for the moſt Part proves Mortal, and that of a ſudden, proceeding from an over Diſtention of the ſmall Blood-veſſels of the Brain, cauſing Apoplectick Diſorders; therefore the Neck-vein muſt immediately be open'd, and ſoon after a Clyſter is to be adminiſter'd, and ſuch an one as will be of ſome Efficacy; for which purpoſe we recommend the following.

" Take of Marſh-mallows two handfuls, Rue one " handful, one bitter Apple, boil them in five Pints of " Water to two Quarts; mix with the Decoction two " Ounces of the Powder, or Species call'd *Hiera Picra*, " with four Ounces of Oil, or Hog's-lard.

This may be once or twice repeated; but if the morbifick Matter happens to be caſt out by Impoſtumation upon any Part that is ſafe, the Uſe of Clyſters may then be laid aſide, unleſs the Oppreſſion and the other bad Symptoms continue, and that there are not to be ſeen in the Horſe's Piſs the Appearances of a Change and Solution of the Diſeaſe; in this Caſe milder Clyſters, ſuch as may be made of Broth, or Water-gruel, with three or four Ounces of common Treacle, may be of no ſmall Service, as they will be the Means to leſſen that Oppreſſion.

But beſides theſe Evacuations, there muſt be a conſtant Uſe of Internal (for ſuch are very much requir'd in all Peſtilential Diſeaſes) and for this Intention the moſt powerful Counter-poiſons are eſteem'd the moſt proper, ſuch as *Venice-Treacle*, *Mithridate*, *London-Treacle*, Pills or Powders made of the Roots of Gentian, white Dittany, Biſtort, Tormentil, *Virginia* Snake-Root, *Zedoary*, *Contrayerva*, and the like; but thoſe things not being always in readineſs, I ſhall therefore take another Opportunity to give ſome Directions concerning their Preparation; and therefore we ſhall in the mean while content ourſelves with ſuch Things as may be had at any Time.

" Take the diſtill'd Waters of Carduus, Queen of the " Meadows, Water Germander and Marigolds, of each a " Quart; or inſtead of the diſtill'd Waters, take a large " handful of each of theſe, infuſe them in four Quarts of " boiling Water. Give your Horſe two Pints of this In-

" fuſion

" fuſion every Day, with half an Ounce of *Venice-Treacle*,
" or *Mithridate*, diſſolved in each Pint; if you add cam-
" phorated Spirits of Wine, it will be yet more efficacious,
" which may be done in the manner following.

" Take Spirit of Wine rectify'd, or *French* Brandy,
" half a Pint, diſſolve it in two Drams of Camphire, let
" two or three Spoonfuls of it be mix'd with each Doſe of
" the Cordial-Infuſion, and it will be a great means to
" overcome the malignity of the Diſtemper."

The Sick Horſe muſt be kept in warm Clothing, and his Body often rubb'd; but if the Diſtemper proceeds from Infection, the Sound ought to be remov'd from the Unſound, and the Stable perfum'd, by burning Pitch, Frankincenſe, Olibanum, Green Juniper-Wood, and the like.

If the Diſtemper goes off like the Glanders, by a Diſcharge of ſtinking corrupt Matter from the Noſe, as is not uncommon in ſuch Caſes, Diaſcordium diſſolv'd in a Decoction, or Infuſion of Red-roſe Leaves, as in the preceding Chapter, may be given him for ſeveral Days; the like may be done in Caſes of any Impoſtumation.

I ſhall put an end to this Chapter, by inſerting a Medicine of the Sieur *de Solleyſell*, which he recommends in Peſtilential Fevers, and with which that Author perform'd a conſiderable number of Cures in *Germany*, where there happen'd to be a great Mortality among the Horſes in that Country. The Medicine was this. *A Medicine of the Sieur* de Solleyſell.

" Take Treacle not above three Months old, and Aloes,
" *Hepetica* in Powder, of each an Ounce, Confection of
" Hyacinth and Alkermes without Musk or Ambergreaſe,
" of each half an Ounce, diſſolve them in a Decoction of
" Scabious, *Carduus Benedictus*, and Speedwel, of each
" a large handful. The ſaid Author obſerves, that the diſtilled Waters of thoſe Herbs were more effectual than the Decoction; but that might be accidental: For he muſt have had a vaſt many Inſtances before he could be ſure of their different Efficacy. But we ſhall proceed to his Method, becauſe it is better than what we have hitherto met with in any Author, or known practiſed by any of our Farriers.

The next and the following Day after this Medicine was exhibited, he injected Clyſters; and if the Violence of the Diſtemper was not abated, the Remedy was again repeated only with half the Quantity of the Treacle, Aloes, and Confections; but the Quantity of the Decoction was the ſame.

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This he affirms to have cured all the Horſes to which it was given. I ſhall here obſerve, that the chief efficacy this Medicine can have againſt the Plague, lies in the Decoction and Treacle, the Confections of Alkermes and Hyacinth being very coſtly; and yet the one will ſcarcely be found to excel our common Syrup of Clove-gilly-flowers; and as the other is chiefly proper in a Lax or Looſeneſs, it may perhaps have check'd the Operation of the Aloes, and chang'd it into an Alterative, which may ſtill be better done by a due mixture of Salt of Tartar.

CHAP. X.

Of a Hectick Fever.

THO' the abovemention'd Author has taken no Notice of this ſort of Fever, in his Treatiſe of Diſeaſes, yet as moſt other Writers have given it a Place in their Performances, and likewiſe ſince it is a Diſtemper that is not uncommon in our Iſlands, where Horſes are not ſo well uſed as in *France*, we have therefore in like manner given it a Place here.

A *Hectick Fever* is very often accompany'd with an internal Ulcer in the Lungs, or ſometimes with an Infirmity in the Liver, and then it is often attended with the Yellows or Jaunders; but there being little or no Hopes of Recovery in either of theſe Caſes, we ſhall conſider it only as the Effect of ſome other Diſeaſe, where the ſolid Parts are wore and abraded, but not much broken.

The Cauſes of a Hectick Fever. The Cauſe is from Weakneſs, firſt brought on the Body of a Horſe by ſome Miſmanagement; as bad keeping, or other hard uſage; or it is often the Effects of ſome previous Sickneſs, which has gone off by ſome imperfect *Criſis*, or by the Exceſs or Suppreſſion of ſome uſual Evacuation. But there is nothing contributes more to bring on *Hectick* Diſorders, than an unskilful and injudicious uſe of Phyſick; for by this means many Horſes, from a Preſumption of carrying off foul Humours, have their vital Spirits ſo far waſted, as to be inſufficient to anſwer the common and uſual Functions of Life.

The Signs. And from hence the Signs of this Diſtemper are manifeſt; for tho' there are many of the common Symptoms of a legitimate Fever accompanying this,

this, as Heat, Dryneſs of the Mouth and Tongue, and few or no Intermiſſions of the Diſeaſe, excepting after Feeding, that the Fever is a little more rais'd, and the Spirits more active than at other Times; yet the leaſt Exerciſe brings them again to their dejected State, and the Horſe is ſcarcely able to move, but looks tired and jaded, as if he had undergone ſome violent Exerciſe; his Fleſh becomes flabby, and while he ſtands in the Stable, he breaks out into frequent and repeated Sweats, which ſtill add to the Decays of Nature, and conſequently adminiſter to this ſharp and lingring Fever. If the Diſeaſe be accompanied with an internal Ulcer, of any Kind whatſoever, it may be diſtinguiſhed by its Extremes; for where ever there is an internal Ulcer, it will be ſometimes choaked up by Inflammation; and until a freſh Diſcharge be made, or that the Blood, by a more free and eaſy Perſpiration has Room to diſperſe itſelf into its proper Channels, the Horſe will diſcover Signs of violent Pain in ſome particular Part, with a more than ordinary Augmentation of the Fever. But of this more particularly in another Place; for here we ſuppoſe the inward Part, if at all, to be but ſlightly touch'd.

The Cure.

The Cure conſiſts in a due Adminiſtration of all thoſe things that are proper to recover Nature; and whatever does that, will by Degrees remove the Diſtemper; and it muſt therefore be a very good Token of Recovery, when a Horſe improves and mends upon an Augmentation of his Feeding; whereas the contrary will always be of bad Prognoſtication.

But what is more particularly to be done in this Caſe, conſiſts, firſt of all, in the diſpenſing of ſuch things as are proper to abate the Heat and feveriſh Symptoms; for which Purpoſe, Recourſe may be had in thoſe Helps, which have already been given for the Removal of a ſimple and legitimate Fever, only with this Caution, That Bleeding is not altogether ſafe, but when there is a Suſpicion of Pain and Inflammation in the Lungs, or other internal Parts, which is diſcoverable by an Oppreſſion, and unuſual heaving of the Flanks, *&c.* Neither are Clyſters profitable here, but will rather prove hurtful, unleſs when the Symptoms are increas'd by an over-great Coſtiveneſs; and in ſuch a Caſe, thoſe of the moſt eaſy and mild Operation are only to be exhibited.

Secondly, Becauſe Reſtoratives are proper in *Hectick* Diſeaſes, theſe ſhould be ſo contriv'd, as to come, as much

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as poſſible, into the Diet of a Horſe; and for that Reaſon Mallows, Mercury, Agrimony, Melilot, Horehound, and the like, or ſuch others of the ſame Kind as are not of a nauſeous Taſte and Smell, may be mixed with his Hay, at leaſt upon Trial, becauſe ſome Horſes will eat thoſe things. The Powder of *Diapente*, which is ſufficiently in the Acquaintance of all Farriers, may be very profitably given in this Caſe; not ſimply, as it is a Reſtorative, but as it contributes to ſtrengthen the Stomach, and helps Digeſtion. And in fine, all *Pectoral Balls*, ſuch as ſhall be ordered in Broken-winded, Conſumptive Caſes, may alſo be exhibited with Succeſs. His Corn ought to be given him only by Handfuls at a Time, but pretty often; and if the diſeaſed Horſe has been uſed to eat Bread, Loaves made of Barley and Flour mixed together, will make up one convenient Part of Diet for him. As for his Drink, two or three good Handfuls of *French* Barley ſhould be boiled in it; for the Barley thus uſed makes a very good Reſtorative, and helps to abate the Acrimony that is ſo conſtant a Concomitant of thoſe Diſeaſes.

Thirdly, Moderate Exerciſe is alſo very neceſſary, and therefore he ſhould be walked out gently every Day when the Weather permits, and that may be increas'd according as he recovers Strength.

And *Laſtly*, his Cloathing ought not to be heavy, nor his Dreſſings more than is uſual at other Times; becauſe in all ſuch Diſorders there is already too great a Propenſity to ſweat.

CHAP. XI.

Of Intermitting Fevers.

ALL Fevers are ſaid to *intermit*, that have any ſenſible Space between the *Paroxyſms*, or the Fits, free from the Diſeaſe; and therefore under this Title are included *Quotidians*, *viz.* thoſe which return once, or oftner, every Day: *Tertians*, thoſe that only return once every other Day; and *Quartans*, ſuch as ſeize a Horſe only every third Day: But theſe proceed from one and the ſame Cauſe, and admit of the ſame Method of Cure.

Now

The Cauſe of Intermitting Fevers.

Now all thoſe things that can any Ways weaken and deſtroy the natural Tone of the Stomach, may very readily bring on Intermitting Fevers; and therefore they are oftentimes the Effect of ſome Fever, Surfeit, or Cold, taken in low marſhy Grounds, which have never been clearly carried off, but by their long Continuance have left a Debility and Weakneſs behind them; the eating Herbs that are of a cold viſcid Nature, and which grow plentifully in ſome Seaſons, may alſo give Origin to Intermitting Diſtempers. But nothing contributes more to the bringing on of ſuch Diſorders, than an unskilful and frequent Uſe of Phyſick; for as the Stomach is uſually the firſt Scene of Action for all ſuch Things, it is eaſy enough to conceive how the Tone of its Fibres may be relaxed or broke, ſo as to render it unfit to perform Digeſtion as it ought to do; and therefore as the Aliment is not ſufficiently comminuted in the Stomach, a great deal of its groſs and viſcid Parts muſt be tranſmitted into the Maſs of Blood, and thereby retard its Motion in the ſmall Veſſels of the Extremities.

The Signs.

The Signs are firſt a Coldneſs, with Trembling, accompanied with a Debility and Laſſitude, which is ſucceeded by an extreme Heat and Drought, that ſuddenly terminates in a plentiful Sweat, and as ſoon as that is over, the Horſe will feed, and appear as if he was quite recover'd, until another Fit overtakes him.

But in order to the Cure, it will be neceſſary to remember, that the Blood, in all Intermitting Fevers, is render'd thick and viſcid; and therefore to bring the Diſtemper to a Solution, it is neceſſary that thoſe Viſcidities ſhould be broke, and this happens during the hot Fit, ſo that a great deal of that *Lentor* is thrown off in Sweat: But becauſe the Stomach continues ſtill in its weak and debilitated Condition, there is therefore a conſtant Supply of freſh Viſcidity communicated to the Blood, for which Reaſon the Diſeaſe returns. But if there be no Alteration in the Habit of the Body, the Diſeaſe will be apt to return at certain Times, and the Intervals between the *Paroxiſms*, or Fits, will be equal; becauſe while we ſuppoſe near the ſame Quantity of the common and uſual Food to be eat, and that there is the ſame Capacity of Digeſtion left in the Stomach; moreover, that all the common Diſcharges are the ſame, or near the ſame, in any given Space, *viz.*

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in 48 or 72 Hours (which conſtitutes the Intervals in Tertians and Quartans) therefore the Blood will probably in that Time acquire a Degree of Viſcidity equal to what it had before the Beginning of that Space, that is, immediately before the Solution of the preceeding Fit, and therefore another Fit will he apt to return at the ſame Diſtance of Time. But if any Alteration happens, whereby the Stomach may be render'd yet more weak ; or if a Food of harder Digeſtion than what is uſual happens to be eat in that Time ; or if the common Diſcharges happen to be more than ordinary obſtructed ; or if a more than ordinary Quantity of the thinner Parts of the Blood be exhauſted; then the Fits, will, probably, return oftner, by reaſon the ſame Degree of Viſcidity will be ſooner ingender'd in the Blood. But if between the Intervals, the Stomach gathers more Strength, and the Blood becomes more attenuated and thin, whether thoſe Changes happen by the Uſe of proper Exerciſe, Diet, or Phyſick, then the Fit will not return at its uſual Time, but, if at all, its Return will be later, for the Reaſons already alledg'd ; and if the ſame Oeconomy of Diet and Phyſick be continued, the Blood muſt yet become more attenuated, and the Stomach will acquire its wonted Tone ; ſo that of Conſequence there will be no farther Return of the Diſeaſe.

From all which it is evident, that the Cure of Intermittent Fevers conſiſts not in thoſe Things that are neceſſary barely to remove the Fit, for that happens naturally by a determin'd Increaſe of the Quantity of viſcid Blood, diſtending the ſmall Veſſels, and an habitual Aptitude in the ſudorifick Pores, to caſt off the *Lentor* by Sweat ; but that Aptitude conſtitutes Part of the Diſeaſe, and is rather to be cured than encouraged ; and therefore ſuch Medicaments are to be uſed as will be of Efficacy, not only to break thoſe Viſcidities which obſtruct the Capillaries and ſmall Veſſels, but alſo to draw up the Solids into ſuch a Tenſity, and recover their Vigour to ſuch a Degree, as is neceſſary to prevent the Increaſe of ſuch Matter for the Time to come ; for it is by this laſt Intention, that Digeſtion, and a due Comminution of the Juices, is to be perform'd.

The Cure. Therefore, if a Horſe labouring under this Diſtemper be young, and has not been too much wore out by the Continuance of his Sickneſs, a moderate Quantity of Blood may be taken from the Neck-vein ; but this muſt be done with Diſcretion ; for if the Horſe

Horſe be old, and much wore with the Diſtemper, it will do him more Hurt than Good.

Immediately after the Fit is over, give your Horſe an Ounce of the following Powder in Red Wine and Water, and let the Doſe be repeated three or four Times a Day, that, if poſſible, the Return of the Fit may be prevented.

" Take Gentian Root two Ounces, Camomile Flowers, " Galingal, Zedoary, of each one Ounce, Myrrh and " Gum Guaicum, of each an Ounce and a half, (or if he " be a Horſe of ſmall Value, two Ounces of the Bark of " Saſſafras, or an Ounce of Oil-bark, may be ſubſtituted " in the Room of the Gum) make theſe into a fine " Powder.

But if there be a Tendency to a Lax or Looſeneſs, in ſuch a Caſe every Doſe of the Powder may be made up into a dry Paſte with *Diaſcordium*, given him either whole or diſſolv'd, in any convenient Liquor; for a Looſeneſs is above all things to be prevented, becauſe in all aguiſh Diſtempers it contributes to the Diminution of a Horſe's Strength.

I knew a Horſe once cur'd of an Intermitting Diſtemper by repeated Doſes of *Diapente* given in Ale; and an eminent Farrier told me he had cur'd two or three Horſes of Agues, only with Juice of Rue given them in a Morning faſting: But the Efficacy of this Herb ſeems to be more adapted to Diſeaſes of greater Malignity; as for the *Diapente*, it is compoſed of the Powders of the Roots Gentian, Birthwort, Myrrh, Bay-berries, Shavings of Hart's-horn, or Ivory, of each an equal Quantity. Theſe Ingredients (the Hart's-horn only excepted) are the ſame with thoſe of the *Electuarium Diateſſeron* of the *London Diſpenſatory*, which claims a very ancient Father in Phyſick for its Author, and are not improper in the Intermitting Diſeaſes of Horſes, eſpecially when there are Things of more Efficacy joined with them.

But ſince the Virtues of the *Jeſuits-bark* are ſufficiently known, and its Effects manifeſt in the Cure of thoſe Diſtempers in human Bodies, it may, no doubt, be given with good Succeſs to Horſes, as the Oeconomy of both is in many Reſpects the ſame; and I am the more ready to introduce this Medicine into the Farrier's Practice, becauſe I knew it given with Succeſs to a fine young Horſe, that was ſo much addicted to Sweating, that he became very weak, and his Fleſh grew exceeding flabby; and indeed

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it cannot but do ſingular Service in all Caſes where the Stomach is weak, and the ſolid Parts relaxed; and I am of Opinion, had the Virtues of this celebrated Drug been known in the Sieur *de Solleyſell's* Time, he had, without doubt, given it a Place in many of his Cures, and would have found its Uſe preferable to that of the Liver of Antimony, in moſt of the ſame Intentions where that was found ſucceſsful.

Now as the moſt ſimple Preparations of the Bark, for the moſt Part, prove more Efficacious than thoſe that have more Time and Labour beſtow'd on them, it may be the better comply'd with; and therefore if the ſick Horſe be of any Value or Service, and has got ſuch a Fever as we are now treating of, take a quarter of a Pound of this Drug made into a fine Powder, and divide it into ſix Papers, for ſo many Doſes. Give one, as ſoon as the Fit is quite gone off, in any common Liquid that is not Purgative; and let two more be repeated in the ſpace of twelve Hours, and a fourth two Hours before the return of the next Fit. And if the Fit returns but once in two Days, then the Bark may be repeated in the ſame manner the Day following; but if there is no return of the Fit at its uſual Time, three or four Doſes more will go nigh to make a Cure. If a Looſeneſs happens, it may be given in *Diaſcordium*, as the Powder above deſcrib'd, until ſuch Time as that Symptom goes off, becauſe during the Looſeneſs, the Medicine loſes much of its Efficacy, as alſo if it be given in time of the Fit.

And becauſe every thing is proper in this Caſe, that may any wiſe contribute to forward the Circulation of the Blood in the Capillaries and ſmall Veſſels, therefore a chewing Ball ought to be ty'd to his Bit, for an Hour, or half an Hour, every Morning, excepting when the Fit is upon him; and he will, doubtleſs, recover much the ſooner, if he be rid out gently for two Hours every Day, there being nothing that contributes more to invigorate the Stomach, and ſtrengthen all the ſolid Parts, than a moderate and continued Uſe of Exerciſe.

His Oats ſhould be clean and nouriſhing; and though he ſhould have but little Feeding at a time, yet that ſhould be often; and if he has been accuſtom'd to Bread, the fineſt will agree with him, but nothing that is harſh and ſcouring.

Good rubbing will be of Service to him, eſpecially when the Diſtemper begins to wear off, becauſe that alſo keeps a Horſe in a ſort of moderate Exerciſe; but he if he be empty,

or

or was but newly reliev'd of his Fit, in that Case he ought not to be over-much fatigued.

CHAP. XII.

Of SURFEITS.

BEcause this is a Term frequently us'd among Farriers, and all Sorts of People, to signify a Disease, we have thought convenient to conclude this Discourse of Fevers, with a short Account of those Disorders that go under that Denomination.

What is generally meant by Surfeits.

By a *Surfeit* is principally understood all such Maladies as proceed from excessive and immoderate Feeding, but especially upon unwholsome Provender, from Cold, or hard Riding, *&c.* whereby the Horse comes to forsake his Food, grows lean, and sometimes will be infested with hard Swellings, which, if they happen to fall upon the Joints, will, in Process of Time, occasion Lameness, and many other Disorders.

Now whatever be the original Cause of Surfeits, whether they proceed from Cold, Excess of Feeding, or Labour, or from any Disposition of the Air and Climate; it is very certain, that what goes under the Notion of Surfeits, is no other than that which follows the imperfect Solution of any Disease; but those which proceed only from a Glut of Provender, and the like, being the most simple, are easy to be cur'd, as their Cause is the most simple; whereas those on the other hand, proceeding from more complicated Causes, are often the Effects of Chronick Distempers, and therefore must be hard and difficult, and oftentimes prove incurable.

But this will be better understood, if we examine somewhat more narrowly into that Kind of Surfeits which proceed from Feeding; for by the Knowledge thereof, all that is necessary concerning Surfeits will be the more intelligible, as it is that alone which, truly and properly speaking, constitutes a Surfeit.

A Surfeit describ'd.

We are then to suppose, that while the Stomach is constantly receiving Food, and as constantly transmitting fresh Supplies of Chyle to the Mass of Blood, that all the Blood-vessels must become distended and full, insomuch that the superfluous Moisture

cannot be carried off thro' the Pores of the Extremities, in ſuch Quantity as is neceſſary, by reaſon that theſe Pores are not of ſufficient Capacity and Magnitude, that is to ſay, they are not wide enough to give Vent to ſo much Matter; and therefore the Diſtention of the Veſſels will ſtill be more increaſed; and as the groſſer Excrements muſt alſo be augmented from the conſtant Supplies of Food, the Guts muſt thereby receive more than can be diſcharged in the uſual and natural Way; but this will be eaſily apprehended by any one, who conſiders the ſlow Progreſs of the Dung in the Inteſtinal Tube, which is of a very great Length from the Stomach to the Fundament, and is wound up into many Circumvolutions and Turnings, as is viſible when the Belly of any Creature is laid open; and therefore when the firſt Paſſages, and likewiſe all the Blood-veſſels are thus cramm'd, a Fever muſt be created; but becauſe the Oppreſſion is ſo very great, that Nature cannot ſupport it long before ſhe diſcharges herſelf of the Burden; therefore where-ever the *Niſus* or *Impetus* is moſt, there ſhe breaks forth ſometimes like a Flood; and if that happen to be in Sweat, the ſudorifick Pores are open, and ſtretch'd to ſuch a Degree, that the Diſtemper will be quite ſolv'd, and all the other Paſſages made glib and eaſy, ſo that the Excretions of another Kind begin all to looſen and fall off through their proper Ducts; but if the Solution happen not to be univerſal, though the Fever be in a Manner abated and quite gone, yet becauſe the internal Glands, but particularly thoſe of the Guts, for this is moſt to our preſent Purpoſe, are not at all, or at leaſt ſufficiently opened, therefore the harden'd Excrements are no ways looſen'd from their Adheſions, but continue faſtned by a Sort of glutinous and viſcid Matter to the Sides of that Canal. But while the Dung is in this Manner pent up, it ingenders a more than ordinary Degree of Putrefaction, and its Acrimony and Sharpneſs becomes a *Stimulus* to the Guts, and by its Vellication occaſions a more than ordinary Quantity of Liquor to be drained from the inteſtinal Glands, ſo that the Excrements are at length caſt forth by a Looſeneſs, and are diſcharg'd in a very great Quantity; and now Nature being more at Liberty by a plentiful Diſcharge of the Dung, the Blood is thereby put into a briſker Motion, by which it dilates itſelf, and flows with more Eaſe, and in greater Quantity, into the ſmall Veſſels towards the Extremities of the Skin, ſo that if its Texture be thin and moveable, it will either cauſe an Hemorrhage at the Mouth or Noſe,

by

by a Diſtraction of the ſmall Fibres, or will otherwiſe break out into little Puſtules among the Hair, which will alſo be accompanied with Sweat, and then the Diſeaſe will probably come to a ſpeedy Iſſue; but if the Blood has acquir'd a more than ordinary Viſcidity during the Lentor and Continuance of the Dung in the Guts, which is moſt likely, and what uſually happens in ſuch Caſes; it will then be apt to ſtagnate in ſome Places more than others, and caſt off the Remainder of the Diſeaſe in Biles and Swellings, ſuch as we often obſerve after Surfeits.

In what Manner Surfeits are to be diſtinguiſhed.

We may therefore determine all ſuch Tumours, or other Excreſcences, as are the Effects of an Over-plenitude and Fulneſs, to be, properly ſpeaking, what belongs to a Surfeit; and when the like Symptoms proceed from the imperfect Diſcharges of any Cold, whereby the Paſſages of Perſpiration have been ſuddenly obſtructed, they then bear a near Affinity to the former, as a Lentor of the Bowels is oftentimes previous, or, at leaſt, a Concomitant of ſuch a Cold. And if ſuch Swellings be the Reſult of a Putrid or Malignant Fever, that has not been of long Continuance before the Diſeaſe was brought to a Solution, tho' theſe may undoubtedly be worſe than the other, yet they only differ in Degree, and require the ſame Method of Cure. And with theſe may be claſs'd all ſuch as happen after any Kind of violent Exerciſe that has not been of long Continuance, and which proceed from ſome ſlight Diſorder ariſing from thence. But if the ſame outward Symptom, or rather Symptoms, having the ſame outward Appearances, proceed from long continued and hard Labour, by which the Machine is, as it were, broke and quite diſorder'd: or if they be the Effects of hectick or intermittent Fevers, or any other internal Malady, that has been of ſuch Duration as to waſte and decay the Body, and pervert the natural Juices, they are in this Caſe not to be deem'd Surfeits, or the immediate Effect of Surfeits, but to be look'd upon as what will conſtitute Ulcers of the worſt kind. But as we have allotted a particular Place for the Cure of all Sorts of Tumours and Ulcers, which the Reader may conſult at his Leiſure, we ſhall therefore in this Place take Notice of Surfeits, and the Accidents that are more eſpecially peculiar to them.

The Cure.

When the Farrier obſerves a Horſe to be ſurfeited, and under a heavy Oppreſſion from the Want of the common and uſual Diſcharges, he ought,

in the firſt Place, to take Blood from the Neck Vein, and after raking him with his Hand, give him an emollient Clyſter, with a larger than ordinary quantity of Oil or Hog's-Lard in it, the better to lubricate the Paſſages; after which, if he has no Fever, or, at leaſt, but a ſlight one, he may give him the following purging Drench.

" Take of Sena one Ounce, Sweet-Fennel Seeds, Cori-
" ander, or Caraway-Seeds, of either half an Ounce, Salt
" of Tartar one Dram, infuſe them in a Quart of boiling
" Water, paſs the Infuſion through a Sieve, or pour it off
" by Inclination, and when it is cold, add to it an Ounce
" of the Powder of Jalap." This muſt be given in the Morning, and the Horſe kept faſting for the Space of four Hours before and after it; and as ſoon as his Drench begins to work, he muſt be walk'd gently, till the moſt of its Operation is over: His Water ſhould be warm, and ſtrew'd with Oatmeal or Barley-Flower, and nothing ſhould be given him that is cold. And here I cannot but take Notice of a ridiculous Cuſtom that has of late been practiſed both among Farriers and Grooms; and that is, giving a Horſe his Belly full of cold Water, to promote the Operation of purging Phyſick; the Effect of this muſt be by creating Colick Diſorders in the Guts, as I have often obſerv'd, and afterwards it never fails to operate to Exceſs; but if Horſes of Strength and Vigour can ſcarcely overcome ſuch Shocks, it muſt go very hard with thoſe that are Weak and Infirm, all which is demonſtrable; but I ſhould think common Reaſon ſufficient to diſſuade People from ſuch palpable Folly; therefore we ſhall ſay nothing further about it, but return where we left off.

A Caution againſt cold Water when a Horſe has taken a purging Drench.

The Day after the Phyſick, chewing Balls are to be uſed for an Hour in the Morning, and then he ought to be rid out for Air and Exerciſe, and at his return he may be permitted to eat a few boil'd Oats with Bran, his Water ſhould be warm all that Day, becauſe the Effects of the Phyſick may not be quite wore off; and the Day following his Phyſick may be repeated, with an Addition of two Drams of *Diagridium*, provided he be a Horſe of Strength. But if after all this he breaks out into Biles, and inflam'd Swellings, which, as has been obſerv'd, happen, for the moſt Part, after an imperfect Solution, then the Uſe of purging muſt be laid aſide, unleſs he turn very Coſtive, and in that Caſe mild Clyſters may be injected; and becauſe Nature

Nature muſt always be aſſiſted in her own way, therefore let him have plenty of warm Water, ſtrew'd with Oatmeal, and acidulated with *Sal Prunellæ*, *purify'd Nitre*, or the like to promote Urine, and to dilute and ripen the Humours; and if he be a Horſe of Value, he may have a Pint of Milk-water, with half a Pint of Treacle-water, given him, and repeated the Day following; but this is more eſpecially to be comply'd with, if the Tumours be the Reſult of a putrid and malignant Fever; for in this, and all other ſuch Caſes, if any Evacuation be made otherwiſe than by ſuch Things as are proper to excite a gentle Breathing through the Pores, and promote the Secretions by Urine, *&c.* Nature will be very apt to alter her Courſe into that which is not ſo agreeable to her; ſo that not being able to make a full Diſcharge, the Relicks of the Diſeaſe will be ſtill left behind; and thoſe things that are made uſe of with an Eye to aſſiſt her, will, probably, inſtead of that, weaken her yet more; and it is from ſuch contradictory Methods that ſo many Horſes loſe their Appetite, or if they be able to eat plentifully, they notwithſtanding look lean and jaded, and are unable to do proportionable Service; and it is from ſuch Miſmanagement that the Mange, Farcin, Lameneſs, Blindneſs, and the whole Train of chronical Diſeaſes, very often take their Origin.

CHAP. XIII.

Of the Diſeaſes of the Head.

General Obſervations concerning Diſeaſes of the Head.

WE find in Books ſeveral Diſeaſes rank'd under this Title, that are ſeldom met with in the Farrier's Practice, at leaſt, not diſtinguiſh'd, unleſs it happens that ſome honeſt well meaning Perſon may take it upon truſt, from thoſe Signs which have been attributed to them by his favourite Author. But yet it is very certain, that a Horſe is often ſubject to Diſeaſes, which in a more eſpecial manner affect that Part; and if his Food were not more ſimple and agreeable to Nature, he would undoubtedly be more ſubject to ſuch Diſeaſes than Man, becauſe of the prone Poſition of his Head, which muſt occaſion a greater Influx of Blood into the Brain, and alſo forward it upon the Eyes, Mouth, and Noſe.

Markham has in his Catalogue enumerated all thoſe Diſeaſes that are peculiar to Man, but in Horſes they are very hard to be diſtinguiſh'd, becauſe of the Similitude of the common Symptoms; neither has the Sieur *de Solleyſell* mended the Matter very much, having confuſedly ſcatter'd them here and there in his Writings, excepting only that he has claſſed ſome together which were the Concomitants of a great Sickneſs that happen'd in *France* and *Germany* in his Time; but theſe were improperly term'd Diſeaſes of the Head, being only the Attendants of that Sickneſs. We ſhall therefore go on a little more methodically in explaining thoſe Diſorders, as they ſeem moſt agreeable to the State and Condition of that Animal; and that we may avoid all uſeleſs Diviſions, we ſhall take them in the Method which ſeems to be the moſt natural.

CHAP. XIV.

Of the Head-ach.

THIS has had a particular Place among the Diſeaſes of the Head, both by the *Phyſicians* and *Farriers*, in all Ages; the laſt have made no Diſtinction, but the *Phyſicians* have diſtinguiſhed between a Head-ach, which they term *Idiopathick*, as it proceeds from a Cauſe without the Blood-veſſels, and that which they call *Sympathetick*, being the Concomitant of ſome other Diſeaſe; But our Buſineſs here is only with the firſt Kind, ſince the other is but a Symptom, which muſt of Courſe wear off with the Diſeaſe to which it belongs.

As to the Cauſe, it is believed to proceed from a Diſtraction of the Fibres of ſome Blood-veſſels in the Brain, or Membranes thereof, occaſion'd by ſome of the ſmalleſt Particles of the *Serum* being ſtruck into the Pores or Interſtices of the ſaid Veſſels, by the frequent Occurſions of the Blood.

The Signs are, according to *Markham*, the hanging down of the Horſe's Head and Ears, dropping of his Urine, dimneſs of Sight, ſwoln, wateriſh Eyes: But theſe are common to divers other Diſeaſes; and I am truly of Opinion, ſuch a Head-ach cannot be eaſily diſtinguiſh'd in brute Creatures, that want the Faculty of Speech, and therefore cannot declare their Infirmities: But however, if a Horſe has

has ſuch Symptoms without a Fever, and if it be obſerv'd that he often puts his Head againſt the Stall or Manger, it will be very proper to have Recourſe to ſome Remedy; for which Purpoſe we recommend Blooding, Purging, and Rowelling, as alſo the Uſe of *Chewing Balls*, &c.

CHAP. XV.

Of the Stavers, or Staggers.

IN order to the Knowlegde of this Diſtemper, it will be neceſſary firſt of all to enquire into the Nature of an *Apoplexy* and *Vertigo*, for without ſome Inſight into theſe, the other can never be rightly underſtood. *Apoplexy.*

Firſt then, As to an *Apoplexy*, That is uſually defin'd a Privation of Senſe and Motion, excepting only a weak and languid one in the Heart and Breaſt; and this proceeds either from a Cauſe without the Veſſels, *viz.* when the Blood or any other Fluid happens to break out of ſome Veſſel within the Brain, or when there happens to be preternatural Bones or Tumours bred and contained within the Skull, or any other extraneous Matter that may in any Sort preſs upon the ſoft Subſtance of the Brain, cauſing thoſe deadly Diſorders. But this is a Species that is incurable, and for the moſt Part ſeizes ſuddenly, without any foregoing Tokens and Warnings: But the other proceeds from ſome Cauſe within the Veſſels, whereby the Arteries, which are woven into the *Pia Mater*, or innermoſt Membrane of the Brain, or that Part of it which involves the Trunk of all the Nerves, becomes over-much extended; ſo that by the Preſſure of theſe Veſſels upon them, Senſation is intercepted, and Motion loſt.

Thus, in an *Apoplexy*, Senſe and Motion are in a Manner quite loſt, becauſe of the Preſſure that is made upon the Origin of all the Nerves that ariſe from the Head: But in a *Vertigo*, Objects that are at Reſt, appear as if they were turning round, and by that Means occaſion any Creature to reel and ſtagger: And this proceeds from the Vibrations and Tremors of the Optick Nerve, whereby the Images falling not directly, but ſucceſſively upon the different Parts of the *Retina*, an Object that is at Reſt, will therefore appear as if it was turning round; *Vertigo.*

and this may be occaſion'd, either when an Animal is fearful of falling, or from a Repletion and Overfulneſs of thoſe Arteries which are ſituated near the Optick Nerve, which, by preſſing upon the Brain, will cauſe a Shaking in that Nerve. But our Buſineſs is only with the laſt.

The Staggers reducible to the one, or the other, prov'd by Inſtances taken from the various Appearances of that Diſeaſe.

Now if we examine a little carefully into all the different Appearances of that Diſtemper which Farriers call the *Stavers* or *Staggers*, we ſhall find them reducible to one of theſe Maladies above deſcribed.

For, firſt of all, if we conſider that Sort which is the moſt ſimple, *viz.* when a Horſe ſuddenly falls down upon the Road in a very hot Day, or when he falls upon hard Riding, we ſhall find nothing in the Cauſe of this Diſorder, but what is in one of the former; and the Reaſon of this is eaſy enough to be conceived, and will happen to a Horſe whether he be in a good or bad Caſe; for when the Blood is put into a more than ordinary Motion by any hard Exerciſe, it will eaſily flow into the Brain of a Horſe in a greater Quantity, than can be readily return'd by the Veins; and therefore the Origin of the Nerves will be preſs'd upon by the diſtending Veſſels, ſo as intercept the Animal Juices; or otherwiſe theſe may be ſent forth in ſuch diſorderly Manner, as to occaſion a Horſe's falling down; but in this Kind, when a Horſe has lain ſome little Space, and that the Impulſe of the Blood ceaſes, it then flows more regularly through the Veins, by which the Arteries become leſs diſtended, and the Horſe recovers his Senſes, and riſes up as from Sleep. Thus the Head is affected in the ſame Manner as in an *Apoplexy*; but as there is little or no Fault ſuppoſed to be in the Blood, the Horſe ſoon recovers, and oftentimes without the Aſſiſtance of any Application.

There is another Kind of *Staggers* which reſembles the former, and alſo affects the Head in the ſame Manner as an *Apoplectick* Diſorder, and that is when a Horſe falls down while at Graſs: And this Sort I have obſerv'd happen the firſt or ſecond Day after they were turn'd out; for while they feed with a more than ordinary Intenſeneſs, with their Head conſtantly down towards the Ground, the Blood muſt flow in a more than ordinary Quantity to the Brain; and while the Head is in this dependent Situation, the Blood in its Return muſt aſcend upwards: So that if a

Horſe's

Horſe's Head be kept long in that Poſture, but eſpecially if the Blood be viſcid, and unapt to Motion, it will undoubtedly obſtruct the ſmall Arteries, and cauſe a Horſe to fall by the Preſſure of thoſe Arteries upon the Nerves.

But that Kind of Stagger whereby a Horſe falls down in the Stable, or when he is newly brought out into the Light, or when his Exerciſe is but moderate, it is either a true Apoplexy, or a Vertigo, or perhaps both; but when a Horſe reels and runs round, being ſome time under the Diſorder before he falls, that is plainly a Vertigo: And if after a Horſe has thus fallen down, he immediately riſes up again, but looks ſtupid and blind, reels and falls again, knocking his Head againſt the Boards or Walls, theſe are alſo for the moſt Part Signs of a Vertigo; for what ſometimes happens of that Kind in a Frenzy, comes not properly under this Denomination (tho' moſt of our Authors confound them together) unleſs it be that Sort of Frenzy, which may proceed from extraneous Matter lodg'd on the Brain, or its Membranes. But all theſe Symptoms we have now mention'd, may, and for the moſt Part, do ariſe from a Vertigo; for here Senſation is not quite obſtructed, but, as we ſuppoſe, a Vibration and ſhaking of the Optick Nerve, the Stable, and every thing about him, muſt ſeem to run round; and if he riſe in this Condition, he muſt certainly fall, and that inſtantly.

The Cure of the Staggers.

Having thus given a ſhort Account of the different Kinds of Staggers, and the Cauſes thereof, we ſhall in the next Place proceed to the Cure. And firſt of all, whether they ariſe from an Apoplexy, or Vertigo, or only from an Over-repletion of the Blood-veſſels of the Head by hard Riding, *&c.* the Method to be obſerved, as to the firſt Intentions, will be much the ſame; becauſe even in the moſt ſimple Kind we ſuppoſe the Blood to be ſomewhat faulty, therefore Blood muſt be taken pretty plentifully both from the Neck-vein, and likewiſe from the Spavin or Flank-vein, or from any other towards the hinder Parts; but firſt from the Neck, becauſe by opening that Vein, as it drains the Blood immediately from the Head, that Portion of the Blood, which is in the ſmall Arteries in the Brain, as theſe are empty'd into the ſmall Branches of the Vein that is opened, muſt undoubtedly give ſudden Relief, and by that Means take off from the Preſſure

The Method of blooding Horſes for Diſeaſes in the Head.

Preſſure upon the Nerves : But becauſe the Head of a Horſe is not in an erect Poſture, as that of a Man, but many Horſes have the Poſition of their Heads only a little higher than their Shoulders; but eſpecially as in all ſuch Diſorders, a Horſe is apt to ſlouch and hang his Head, a Revulſion is alſo to be made by opening a Vein behind, and this ought particularly to be obſerv'd in all Diſeaſes of the Head ; for altho' Blood taken from the Neck-vein, is very proper to give immediate Relief, yet a greater Quantity muſt thereupon flow into the Brain, ſince it is ſufficiently known, that all incloſed Liquids will run towards a Vent; but when a Vent is made ſoon afterwards behind, then a greater Quantity of Blood will flow into the deſcending *Aorta*, and from thence backwards; ſo that a leſſer Quantity will flow forwards towards the Head.

For which Reaſon, unleſs the Horſe be weak, take immediately a Pint of Blood from the Neck ; and when that Operation is over, open one of the Veins behind, and from thence let him blood a full Quart. This alone will cure any ſtagger'd Horſe, if ſo be his Diſeaſe is ſimple, and only of the firſt Kind, and that he is afterwards kept to a moderate cleanſing Diet, and is for ſome Time thereafter harden'd with proper Exerciſe.

But if the *Staggers* are the Reſult of a true and genuine Apoplexy, he muſt be exerciſed every Day with *Chewing Balls* made of *Aſſa Fœtida*, Savin, and the moſt noiſome things that can be got ; for thoſe Smells will put him upon conſtant Action, and help to forward the Motion of the Blood in the ſmall Veſſels where it is obſtructed.

After this, Recourſe muſt be had to Clyſters, to ſtrong Purgatives ; for which Purpoſe we recommend the following Clyſters out of *Solleyſell.*

" Boil two Ounces of the *Scoriæ* of Liver of Anti-
" mony, made into a fine Powder, in five Pints of Beer ;
" after five or ſix Warms remove it from the Fire, adding
" a Quarter of a Pound of the *Unguentum Roſatum*, in-
" ject it lukewarm. Inſtead of the *Unguentum Roſatum*,
" may be uſed Butter or Hog's-lard." Or the following Clyſter may alſo be uſed.

" Take two Bitter Apples, boil them in five Pints of
" Water ; pour off the Liquor, and mix with it three
" Ounces of the Juice of the Buckthorn Berries, or four
" Ounces of the Syrup, the ſame Quantity of Oil or But-
" ter as in the former." Theſe may be repeated two or three

three times; after which the following purging Drench may be given.

" Boil one bitter Apple in a Quart of Beer, and after it " has been ſtrained out, and is become almoſt cold, add " to it an Ounce and a half of Powder of Jalop, and " two Drams of Diagridium." Theſe may be repeated two or three Times, if the Horſe has ſtrength to bear it.

He ought alſo to be exercis'd and rubb'd very well; and while he is under ſuch Courſes of Phyſick, his Water ſhould be warm, and ſprinkled with Oatmeal.

The Cure of a Vertigo.

But that Kind of Staggers which is occaſion'd from a Vertigo, requires a milder Method; and therefore a Clyſter made of an Ounce of *Sena* boil'd in five Pints of Water, with four Ounces of common Treacle, with the uſual quantity of Oil, or Lard, may be injected: And this may be alſo repeated for two or three Days; after which he may have a Drench of Beer given him, wherein Roots of Piony, Angelica, Rue, Roſemary, Flowers of Lavender, and the like, have been ſteep'd, according to the following Preſcription.

" Take of the Roots of Male-piony one Pound, Roots " of Angelica half a Pound, Gallangal bruiſed four Oun- " ces, Flowers of Lavender, Tops of Roſemary and Rue, " of each two Handfuls; let them be infuſed in eight " Gallons of new Wort, and when it has ſufficiently " work'd, give your Horſe two Quarts every Day, keep- " ing him bridled an Hour before and after."

But if this Diſorder happens to continue obſtinate, and there are frequent Threatnings of a Relapſe, ſuch things muſt be uſed as will effectually eradicate the Cauſe; for which Purpoſe we recommend the following Balls, *viz.*

" Take of Cinnabar, and the cleareſt *Aſſa Fœdita*, of " each half a Pound, Bay-berries four Ounces, Caſtor two " Ounces:" But if the Horſe be of ſmall value, and not worth the Expence of the Caſtor, it may be left out, though the Medicine will not perhaps be of ſuch immediate Efficacy. " Theſe muſt be pounded in a Mortar " until they are reduced into Powder; after which they " are to be made up into a Maſs, or ſtiff Paſte, adding " by degrees as much Oil of Amber, as is ſufficient for " that Purpoſe; make them into Balls weighing an " Ounce and a half each, whereof one is to be given every

" Morn-

" Morning in a Quart of the medicated Ale, ſtanding " bridled as above directed." The Cinnabar, as all other Minerals, but eſpecially as it abounds with Quick-ſilver, is therefore a moſt efficacious Remedy for opening Obſtructions in the ſmalleſt Veſſels: But the Reader may turn to that Part where we have treated of the Farcin, where its Virtues are taken Notice of at more length.

But here it is to be remarked, that the laſt preſcribed Remedies are not only proper in that kind of Staggers, where the Horſe reels and turns round, but alſo in the other kind, when he falls on a ſudden: For as in an Apoplexy, Senſe and Motion are taken away by a Preſſure on all the Nerves, ſo in a Vertigo the Preſſure is either in Part, or elſe the nervous Juice is render'd more viſcid and unapt to Motion than it ought to be, ſo as to occaſion thoſe Tremors, which are the more obſervable in the Optick Nerve, as they affect the Sight; and therefore the chief Difference in the Cure lies only in this, That in Apoplectick Caſes things of the greateſt Efficacy, muſt be uſed, even in the common way of Evacuation, becauſe Senſe is ſo much deſtroy'd in all Parts of the Body, that things of a milder Nature will do but little Service; whereas in Vertigo's, Senſation not being altogether obſtructed, at leaſt in the beginning, but render'd diſorderly, the Purgations need only be ſuch as will make moderate Evacuation, and theſe not long continued.

The common way of curing the Staggers.

Moſt of our Farriers cure the Staggers by making Applications of things, that are of a hot and pungent Nature, to the Ears; as Garlick, Rue, *Aqua-vitæ*, Cloves, Ginger, Bay-ſalt, and the like, which being ſtitch'd up within the Ear, may, no doubt, be ſometimes Efficacious in thoſe Caſes that are ſimple (and which are indeed the moſt common) as they ſtimulate the tender and ſenſible Membrane, which covers thoſe Parts, and thereby rouze the Blood to a quicker and briſker Motion; but theſe ought to be us'd with Caution and Circumſpection; for I have ſeen Horſes run ſtark mad when thoſe Applications have been too ſtrong; and it was with much ado they could be kept from knocking out their Brains againſt the Walls; and ſometimes that violent Agitation, inſtead of giving Relief, makes the Fits return the oftner upon them, by driving too much Blood into the Arteries of the Brain.

CHAP. XVI.

Of a Palsy.

THE antient Farriers, and many of the Country People to this Day, when they see a Horse or a Bullock have his Limbs suddenly taken from him, and not being able to think what should be the Cause of such an unexpected Change, believe him to be either Planet-Struck or Shrow-run; but most or all those Accidents are owing to the Palsy, and therefore we shall include them under that Denomination.

A Palsy defin'd.

A Palsy is an Inability to Motion, arising either from a Fault in the Blood or Animal Spirits, or from both together; and it seizes sometimes the whole Body, sometimes one Side, and sometimes a particular Part only.

When the Cause happens from the Animal Spirits, then Sensation is in a manner lost; and sometimes with an Inability to Motion also; and because the nervous Fluid is render'd thick, and unapt to Motion, and the Nerves themselves relax'd and moist, and consequently unfit for lively Vibrations. There will also be sometimes a Numbness and Insensibility to the Touch, but yet a Capacity of Motion may be preserv'd. But when a Palsy arises from a Fault in the Blood, *viz.* from an over-great Humidity, or when it is render'd too thick: In the first Case the Muscles are stretch'd out in length, and their Fibres relax'd, and by loosing their Tone, they become incapable of Contraction; and therefore tho' there may be a Distribution of the nervous Juice, yet Motion is lost by reason of that over-Relaxation, while at the same time Sense may remain; and in the other Case, though there be a Concourse of Spirits, yet the Blood is so thick, that it cannot be suddenly enough rarefy'd to produce Motion. But, lastly, when the Blood and Spirits are both affected in a Palsy, the Sense and Motion will both be lost: And if the Nerves or Blood be affected within the Brain, then the Palsy will be accompany'd with an Apoplexy or Vertigo.

The Causes of a Palsy.

And therefore the Causes of a Palsy are all those things that may induce an over-great Humidity into the Blood and Spirits, so as

to occaſion a Relaxation or Looſeneſs in the Canals, or Fibres; or when the Blood alone is render'd ſo thick, that it cannot be ſuddenly rarefy'd, by which Means the Nerves and animal Juices become alſo affected; and this is uſually brought about either by a moiſt Temperament, Climate, or Seaſon, or the eating of cold viſcid Herbs, but eſpecially when a Horſe goes in a wet, marſhy Paſture, and lies frequently on the cold wet Ground. The ſame Effects are alſo produced from things of an oppoſite Nature, as the internal Uſe of hot things; but our Buſineſs is only with that Sort of Palſy which proceeds from *Humidity*, &c. the other ſeldom or never happening to Horſes.

Its Cure. In order to the Cure, the Horſe ſhould be exerciſed with *Chewing Balls* made of Savin, Roſemary, and Lavender flowers, made into Powder, and beat up with *Aſſa Fœtida*, and a ſufficient Quantity of Oil of Amber; after which to be ty'd in a Rag, and faſtened to the Bit, as uſual: And at proper Intervals, Clyſters ſhould be injected, ſuch as have been ordered in an *Apoplexy*. But, as we ſuppoſe the Cauſe from an over-great Humidity and Relaxation of the Veſſels, Bleeding is not neceſſary, but may rather prove hurtful, unleſs there ſhould alſo be the Signs of an *Apoplexy*, and in that Caſe it will be very needful.

All hot things, as Muſtard, Ginger, Pepper, and other Spices, but eſpecially Muſtard infus'd in Ale, will be proper to recover the Tone of the Fibres, and theſe may be given alone, or added to the Ale above directed, in an *Apoplexy* and *Vertigo*. But as the external Parts are ſo ſenſibly affected in this Diſtemper, therefore Embrocations of hot and penetrating Oils and Spirits are to be rubb'd, wherever Motion is loſt or impair'd; ſuch as the Oil of *Petre*, Oil of *Amber*, Oil of *Saſſafras*, and the like, mix'd with the *Soldiers* Ointment, or Ointment of Marſh-mallows, with a ſmall Quantity of Spirit of Sal Armoniac, or other volatile Spirit.

Sweating in a Dunghill, or with very warm Cloathing, will likewiſe be of great Service; as alſo frequent Drinks of the Decoction of *Guaiacum*, *Saſſafras*, &c. ſuch as is preſcrib'd for the Farcin.

Laſtly, A Horſe ought, in all paralytick Caſes, to be rowel'd in one or more Places; for by that Means a great deal of the moiſt or viſcid Matter will be diſcharg'd, and the Nerves and muſcular Fibres ſtrengthen'd.

CHAP.

CHAP. XVII.

Of the Falling Evil and Convulsions.

THE *Falling Evil*, is that which, in the *Physicians* Terms, comes under the Denomination of an *Epilepsy*, and seems to be no other than an *Apoplexy* or *Vertigo*, accompanied with *Convulsions*, either as the Cause or Effect.

In the *Falling Evil*, a Horse drops down of a sudden, his Teeth and his Eyes become fix'd, but his Head and Body is shook and extremely agitated; Froth bubbles out of his Mouth, his Flanks heave and labour, and sometimes there is an involuntary Excretion of the Dung and Urine: All which arise from an involuntary and disorderly Motion of the Blood and animal Spirits, rushing with greater Impetuosity into a Muscle on one Side, than that which is its Antagonist, so as to occasion a Vellication and Contraction of that Muscle; and because there is not an equal Quantity of Blood and Spirits detach'd into the opposite Muscle, therefore that Member cannot be extended as well as contracted, but drawn one Way, and the Part affected will continue immoveable, excepting in those violent Shocks and Agitations.

The Cause of *Convulsions* are, *First*, whatever wastes and exhausts the Body, or any of its Parts, as the taking away too much Blood, violent Purging, or hard Labour, long Sickness. *Secondly*, Whatever fills the Body too much, and gives Origin to Obstructions in the Blood-vessels or Nerves, or brings a Debility and Weakness into the Stomach: And *Lastly*, Wounds, or whatever else causes Pain and Inflammation. *The Cause of Convulsions.*

As to the Cure, it is the same with that of an *Apoplexy* or *Vertigo*; only this general Rule is to be observed, that when it proceeds from Looseness, Evacuations by Blooding and Purging are to be laid aside, excepting where some Circumstances may make a moderate Use of them necessary: But as our *British* Horses are seldom troubled with these Disorders, excepting when they are occasioned by Wounds, or other things inducing exquisite Pain and Vellications in the more sensible Parts; and because these will be taken Notice of in their proper Places, we shall therefore omit saying any thing farther about them here.

CHAP.

CHAP. XVIII.

Of the Lethargy, or Sleeping Evil.

THough this Diſtemper is as ſeldom to be met with as the former, yet becauſe it has been treated of by ſome of our Authors, we ſhall ſay as much concerning it as is needful.

Markham obſerves, that it proceeds from Phlegm; and that white and dun Horſes being of a phlegmatick Diſpoſition, are moſt ſubject to it. But a Lethargy is as near ally'd to thoſe that have been the laſt deſcrib'd, as poſſible, and is oftentimes their Companion, and is produc'd by the ſame Cauſes which bring on an Apoplexy, or any of the other Diſtempers peculiar to the Head. For in a Lethargy, tho' a Creature is not abſolutely depriv'd of Senſe and Motion, yet by a Preſſure of the ſmall Arteries upon the Nerves, and an Over-thickneſs of the nervous Juice, both the external and internal Senſes become dull, cauſing a perpetual Inclination to Sleep, which at length, as it impairs the animal Faculty, weakens and decays the Body.

The Cure. The Cure is, in the Beginning to take a moderate Quantity of Blood, if your Horſe be in good Caſe; but if he be very poor, and that the Diſeaſe has taken its Origin from Exinanition, then your Horſe, if at all, is to be but ſparingly bled and purged.

But *Chewing-balls* of the moſt fetid ſtinking things imaginable are to be us'd every Day, ſo far as the Horſe's Strength is able to bear the Action; for theſe will help to rouze his Spirits, and put the Blood into a briſker Motion. And for the ſame Purpoſe volatile Salts or Spirits, as thoſe of Armoniack, or Hart's-horn, may be ſometimes held to his Noſe. The *Cinnabar-balls*, directed in an Apoplexy and Vertigo, ought alſo to be given him every Day, and continued for a conſiderable Time, and Rowels or other Iſſues ought to be put into his Belly, but particularly a Hair-Rowel put through his Skin behind the Poll of his Head, which alone will ſuffice, if the Horſe be weak. In which Caſe alſo he muſt be well kept, by having Food often, tho' but little at a Time. By this Method your Horſe may be recovered, if he is not wore out with Age, or very much broke by the Continuance of his Diſeaſe.

CHAP.

CHAP. XIX.

Of the Frenzy and Madneſs in a Horſe.

ALTHO' we are very well aſſur'd that our *Britiſh* Horſes are not often ſubject to Madneſs, yet becauſe the *Italian* Authors, and likewiſe ſome of our own, have rank'd it among the Diſeaſes of the Brain, *&c.* we ſhall therefore, in Obedience to Cuſtom, before we leave this Subject, take Notice of thoſe Things that are the moſt likely to produce frantick Diſorders.

The Cauſes of a Frenzy.

Firſt of all then, A Frenzy may be caus'd by the exceſſive Hurry of the Blood in a legitimate ſimple Fever; but that Symptom will very readily abate, by thoſe Things that are proper to aſſwage the Violence of that Diſeaſe.

Secondly, Blood or Matter collected upon the Brain, or the Membranes that involve it, may occaſion a Frenzy, whether that proceed from Wounds or Bruiſes, or from a Diſtraction or Rupture of the Veſſels, when they have been over-full and diſtended beyond Meaſure, or when there is any foreign Subſtance grown within the Skull; but then a Frenzy ariſing from ſuch Cauſes will probably end in ſudden Death.

Thirdly, A Frenzy may follow upon the Bite of any venomous Creature; but this will affect the Head as a Peſtilential or other Malignant Fever, and as to Internals, muſt be treated after the ſame Manner; what relates more eſpecially to the Wound, ſhall be taken Notice of in its proper Place.

But *Laſtly*, That Sort of Frenzy, which in a more particular Manner deſerves the Name of Madneſs, is what may happen without the Concurrence of any other Diſeaſe, and is moſt likely to proceed from exceſſive Luſt, occaſion'd by full Feeding, either in a Horſe or Mare, and when they are reſtrain'd from Copulation; for by this Means many lively Images may be preſented to the Imagination, without any Certainty or Order, and like a Dream delude the Fancy; ſo that they will be apt to tear and rend every thing that comes before them. But this may alſo be cur'd by Bleeding and Purging, with the Concurrence of a low Diet, *&c.*

The Stallion ſnuffs the well-known Scent afar,
And ſnorts and trembles for the diſtant Mare;

Nor Bits nor Bridles can his Rage reſtrain,
And rugged Rocks are interpos'd in vain;
He makes his Way o'er Mountains, and contemns
Unruly Torrents, and unforded Streams.
Dryden's Virg. Georg. *Book* III.

But far above the reſt, the furious Mare,
Barr'd from the Male, is frantick *with Deſpair;*
For when her pouting Vent declares her Pain,
She tears her Harneſs, and ſhe rends the Rein:
For this when Venus *gave them Rage and Pow'r,*
Their Maſters mangled Members they devour,
Of Love defrauded in their longing Hour. Ibid.

CHAP. XX.

Of the Diſeaſes of the Eyes.

THere are no Diſeaſes whereunto Horſes are more liable, than thoſe that happen to the Eyes, the Reaſon of which will not be very difficult to any one who is acquainted with the Oeconomy of a Horſe, but particularly with the Structure and Mechaniſm of the Eye, which is ſuch a tender Part, and ſo ſenſible to the Touch, that the leaſt foreign Matter from without, as a Grain of Sand, or a little Duſt, will put any Creature into exquiſite Pain, and the leaſt Determination of Blood and Spirits from within, more than ought to come into thoſe Parts by the common Courſe of Circulation, will have the ſame Effect. But when we conſider the natural Activity of a Horſe, and that the common Service requir'd of him, expoſes him more to Heats and Colds, and to all Manner of Fatigue and Toil, than any other Creature; and that of Conſequence he is render'd more liable to Sickneſs, and ſuch as is of the worſt Kind, he muſt therefore be more ſubject to Infirmities of the Eyes, and ſuch as without a great deal of Care will be apt to end in abſolute Blindneſs.

All Diſeaſes of the Eyes proceed either from external or internal Cauſes, or from an ill Conformation of the Eyes.

Now all the Diſeaſes of the Eyes proceed either from external Cauſes, ſuch as Wounds, Bruiſes, Duſt, or other foreign Matter getting within the Eyelids; or from internal Cauſes, ſuch as are the Effect of Sickneſs, or any Indiſpoſition of the Blood. And laſtly, a Horſe may be render'd obnoxious to Diſeaſes in

in his Eyes, from an ill Conformation of the Eye itſelf; as for Inſtance, when the Eye happens to be too large or too ſmall, or when the Pupil, or clear tranſparent Part of the Eye is narrow, and ſomewhat longiſh, as is obſervable in many Horſes; for in this Caſe the Cryſtalline Humour ſeems to be over-much compreſs'd by the circumambient Parts; and if any Rheum, or flux of Humours, happen to fall into an Eye that has this Defect in it, the Infirmity will readily Increaſe, and in time the *Retina*, or Bottom of the Eye, will be quite hid, ſo as to produce Blindneſs. Yet notwithſtanding all theſe Imperfections, a Horſe's Eyes may be very good, if he be otherwiſe of a hearty Diſpoſition; and they may continue good during his Life, if there be proper Care taken of him, and that he meets with no Accident; however, as all Diſeaſes are the Worſe the more they are complicated, therefore when any Accident happens to the Eyes, its Cure will be the more difficult, where there is, beſides the Diſeaſe, a natural Defect and Imperfection in the Eye itſelf.

Having thus diſtinguiſh'd between thoſe Diſeaſes of the Eyes that proceed from external Accidents, and thoſe that ariſe from internal Cauſes, or from an ill Conformation of the Eye itſelf, or when there is a Complication of thoſe Cauſes; we are in hopes, by this general Diviſion, the Diſeaſes incident to the Eyes of Horſes will be much the better underſtood, becauſe all the different Sorts of Blindneſs, and all other Accidents whatſoever happening to the Eyes, are reducible to one or other of theſe general Cauſes, which not being ſufficiently attended unto by Farriers, has made thoſe Cures hitherto very imperfect.

CHAP. XXI.

Of a Wound or Blow on the Eye, as alſo of other external Accidents.

THE Diſeaſes which are cauſed by outward Accidents become more or leſs dangerous to the Eyes, according as the Cauſe is more or leſs violent, but eſpecially as the Horſe happens to be in a good or bad ſtate of Health when ſuch Accidents befal him.

Small Accidents on the Eyes, how cur'd.

When the Cauſe is ſimple, as for Inſtance, proceeding only from Duſt, or any other extraneous Matter blown into the Eyes, or when

they are hurt by ſharp froſty Winds, or the like; if theſe Diſorders do not wear off immediately upon Reſt, as is uſual, then the Eye ought to be look'd into; and if there be any bit of ſharp Sand or Gravel ſticking to either Angle, it ſhould be wip'd out with a bit of very fine Spunge, cut ſmall at the Point, and ty'd with a wax'd Thread to the End of a Stick; if there is nothing to be ſeen, the moſt ſimple and eaſy things in the Beginning will go nigh to relieve them, and recover them to their uſual Strength and Vigour, as a little Plantain and Red-roſe Water, or the Leaves of Plaintain and Red-roſes boil'd in Water, waſhing the Eyes with the Decoction three or four times a Day Blood-warm.

The Cure of a Wound or Blow.

But when a Horſe receives a Wound or Blow on the Eye, or ſo near as to cauſe an Inflammation in the Eye, the firſt thing to be done in this Caſe is, to open the Neck-vein, taking from thence a moderate Quantity of Blood; and this I rather chuſe than opening that near the Eye; becauſe when the Neck-vein is opened, it will not cauſe ſo great a Derivation towards the Eye, as when the Eye-vein is open'd; for when an Orifice is made too near the affected Part, the Blood is apt to flow in an over-great Quantity, towards that Part, as we have already obſerv'd in another Place; and the Eyes being in a dependent Poſition, as they are ſituated in the lower Part of the Forehead, the Blood therefore falls by a very eaſy deſcent into them.

After Blooding the Eye may be look'd into, but if it be ſo much ſwell'd that it cannot eaſily be open'd, as it often falls out, becauſe of the immediate Flux of Blood into the Eyelids; then the following Application may be made, *viz.*

" Take Conſerve of Red-roſes, ſpread it pretty thick " on a Pledgit of fine Flax, or clean Hurds, and lay it " over the Eye, applying at the ſame time above the Eye- " pits, and about the Temples, Flax dipp'd in a Charge " made with Vinegar, the White of an Egg, and Bole- " armoniack; this by allaying the Heat, will put a Check " to the Blood, and hinder it from flowing too faſt to- " wards the Eye.

The whole Dreſſing ought to be cover'd with a Bandage about four or five Inches Broad; this may be made of pretty thick, but ſoft Canvas, ſtitch'd to the upper Part of the Collar, ſo as to cover the Half of the Face; when the

the Sorance is but in one Eye, it ought to reach to the middle of his Noſe, and to have a Piece of ſtrong Tape faſten'd to each of the lower Corners to tie behind; but this muſt be ſo eaſy, as not to hinder the Action of the lower Jaw.

Bathe or moiſten the Edges of the Eye-lids with warm Honey of Roſes and Red Wine two or three times a Day. There will be no Occaſion of torturing him too much, by forcing Medicines into the Eye, for in all ſuch Caſes thoſe harſh Methods do more Harm than Good, for as the Eye is a tender ſenſible Part, it is to be us'd with all the gentleneſs imaginable.

But becauſe an increaſe of the Quantity of Blood muſt certainly be prejudical where the Eye is bruis'd or wounded, and has a great tendency to Inflammation; therefore, beſides the opening of a Vein (a Method of dreſſing being now ſet on foot) ſome other Evacuations may be encourag'd, for which Purpoſe he may have purging Clyſters, or every now and then ſome kind of Phyſick that is very moderate; for ſtrong Purging, by putting the Blood in too great an Agitation, would be apt to make it flow over-readily into the diſeaſed Part, which is to be avoided as much as poſſible; and therefore I prefer the Uſe of Clyſters to other Purging, in this Caſe eſpecially, as we don't ſuppoſe any Fault in the Blood.

And therefore ſeeing the Body is only to be kept cool, ſo far as relates to Internals, a ſoluble Diet muſt alſo be very proper, giving him, inſtead of Oats, ſcalded Bran, as alſo now and then a Maſh of Malt; and in his Water may ſometimes be diſſolv'd half an Ounce of purify'd Nitre or *Sal Prunellæ*, which will alſo contribute to the ſame End.

His Exerciſe ought to be gentle, ſuch as will not excite too great Heat, but rather cool and refreſh his Body, and create an Appetite.

If there be the Appearance of proud Fleſh upon the Wound, take Powder of Tutty finely levigated, and lay a little of it on the Excreſcence once a Day; or thus, Take Tutty prepar'd, burnt Allum and Sugar-Candy in fine Powder, of each equal Parts, take a ſmall Quantity of this Powder between your Finger and Thumb, and apply it upon the Fungus.

A Wound or Blow may be thus eaſily cur'd if the Eye is not very much bruis'd, or if the Wound be but ſuper-

ficial, and clear from the *Pupilla* of the Eye; but when it is otherwiſe, Death or Blindneſs may be expected.

When a Horſe's Eye happens to burſt ſomewhat out of its Socket, by the violence of a Blow or Wound ſtretching or cutting the Muſcles, the firſt Thing to be done is, to reduce it, and put it carefully in its Place, applying the Charge as above directed; and after the ſame Method of keeping the Horſe's Body cool and open has alſo been comply'd with, and that it begins to matter, it may be dreſs'd with the following Digeſtive, *viz.*

" Take Honey four Ounces, Oil of Roſes one Ounce, " and the Yolks of two Eggs, mix them together, by ſtir- " ring them with a Knife, or wooden Slice; and when " the Digeſtive has been made a little warm before the " Fire, dip a Pledgit of Flax into it, and apply it over the " Eye." This may be done once or twice a Day, and a reſtringent Charge continued over the Dreſſing, until the Cure is perform'd, though in reality the Iſſue will be very doubtful, if the Muſcles are much relax'd or wounded.

Note, In all Accidents where the Eye is bruis'd, or wounded, a Horſe ought to have no Oats given him but what are boil'd ſoft, until the worſt Symptoms are gone; but eſpecially in this laſt Caſe, where it is protruded and thruſt out of its Socket, for then his Food ought to be only ſcalded Bran, now and then with a mixture of Oats; becauſe the Action of the Jaw, in chewing hard Food, would be a great Means to hinder the Cure.

CHAP. XXII.

Of Rheums and Inflammations in the Eyes.

Rheums and Inflammations. THO' Rheums and Inflammations, for the moſt Part, accompany the ſlighteſt Diſorders in the Eye, yet, if after a Wound or Bruiſe has been heal'd, the Eye continues weak and indiſpos'd, a Horſe will become much ſubject to thoſe Diſorders for the Future, eſpecially upon every Change of Air or Diet, or as often as he chances to be Rid harder than ordinary, or put upon any uncommon and unuſual Exerciſe.

The like will alſo happen from any other Cauſe inducing a weakneſs into the Eye, as after a Cold, or other Sickneſs affecting the Eyes, and where there has not at firſt been

been ſufficient Care taken to put a Check to the Influx of the Humours, or to take off their Acidity and Sharpneſs; for by this Means the Eye becomes injur'd, and is render'd liable to Rheums and Defluxions, and to many other Accidents, notwithſtanding the Horſe may, in all other Reſpects, be recover'd to a good State of Health.

Sometimes thoſe Symptoms do accompany, or are the Effects of an ill Habit of Body; whether that be induc'd at firſt by an Over-plenitude, or if it ariſes from Debility and Lowneſs, or from any other Cauſe, whereby the Blood becomes vitiated; for as the Eyes are very tender, and of exquiſite Senſe, they muſt therefore be as ſenſibly affected in all ſuch Indiſpoſitions, as any other Part of the Body.

The Cure.

And therefore, in order to the Cure, the Farrier ought to examine diligently both into the paſt State and preſent Condition of the Horſe. If he finds him under any Indiſpoſition, then his firſt and chief Care muſt be to remove that; that, for Inſtance, if he be Hide-bound, or if he has got the Farcin or Mange, *&c.* ſuch Things as are hereafter ordered in thoſe Caſes, muſt be adminiſter'd to him at the ſame Time that proper Applications are made to the Eyes; but if a Horſe be otherwiſe in a tolerable State of Health, the Farrier may conclude, that there is either ſome natural Infirmity in the Eye, diſpoſing it to thoſe Diſorders, or elſe that the Eye is render'd very weak and diſeaſed by a continual Defluxion upon it; in either of which Caſes it will not be very needful to burden him with Medicines: But yet if the Horſe be full of Fleſh, leſt the Diſtemper ſhould be over-much fed, a moderate Quantity of Blood may be taken from him, and he may be purg'd gently every Week, or have now and then a Clyſter given him; and the other Rules of Diet and Exerciſe, which have been laid down in the foregoing Chapter, may alſo be obſerved.

After theſe general Directions, we ſhall conclude this Chapter, by inſerting ſuch Remedies as the Practice of the beſt Mariſhals has warranted to be the moſt effectual in all outward Intentions, where the Eyes have been troubled with ſharp Rheums and Inflammations.

If the Eyes are only inflam'd, without a Defluxion of *Serum* upon them, they may be waſh'd once or twice a Day with a little Wine, Red or White; or Wine wherein the Leaves or Tops of the common Briar have been boiled; or if theſe are not in Seaſon, the following may be uſed.

" Take Camomile and Red-roſe Leaves, of each half a " handful, boil them in a Pint of Water till a fourth Part " be conſumed, ſtrain the Decoction, and add to it a Dram " of Camphire, firſt diſſolv'd in a Spoonful of Brandy." Let your Horſe's Eyes be moiſtened therewith two or three Times a Day.

Or the following Remedies may be us'd, which will be of equal Service in all Caſes where there is a Defluxion of Rheum, for where there is only an Inflammation.

" Take white Vitriol two Pounds, Roch-allum three " Pounds, fine Bole-armoniack half a Pound, Litharge of " Gold or Silver two Ounces; reduce all the Ingredients to " Powder, and put them into a new glaz'd earthen Pot, " with three Quarts of Water, boil them very gently over " a ſmall Fire without Smoke, ſet equally round the Pot, " till the Water be evaporated, and the Matter at the Bot- " tom perfectly dry; then remove the Pot from the Fire, " and ſuffer the Matter to cool, which ought to be hard, " and will ſtill grow harder the longer it is kept." This is called the *Lapis mirabilis*, or wonderful Stone.

" Put half an Ounce of this Stone in a Glaſs Bottle, " with four Ounces of Water, it will be diſſolved in a " quarter of an Hour, and make the Water white as " Milk, when you ſhake the Bottle; you muſt waſh the " ſore Eye Morning and Evening with the Water or So- " lution." A Solution thus made will keep twenty Days.

This I have taken from the Sieur *de Solleyſell*, who gives the following Account of it; and, doubtleſs it muſt be very good.

" Some Apothecaries, (ſays he) keep this Stone in their " Shops, and make Uſe of it for Men; and as for me, I " uſe it for Horſes, nor ever ſeek any other Remedy for " Rheums, Blows, or Moon-eyes. Every Man that is " Maſter of a Horſe ought to keep ſome of it by him, " for it will keep very good long; and there are few Re- medies for the Eyes that are not inferior to it.

Many of this Kind might be added, but we ſhall content ourſelves in this Place by inſerting one more, which has been us'd with equal Succeſs both to Man and Beaſt; and has been recommended for ſuch Intentions by one of the beſt Judges; and is as follows.

" Take

" Take *Roman* Vitriol and Bole-armoniack, of each two " Ounces, Camphire half an Ounce, and powder them " together; of this Mixture ſprinkle half an Ounce at a " Time in two Pound of boiling Water, in which ſtir it " well about, then take it off the Fire, let it ſettle, and " decant off that which is clear by Inclination." This is an excellent Remedy, not only for Rheums and Defluxions of the Eyes, but for many Purpoſes externally. It may be made ſtronger or weaker, as the Practitioner ſhall ſee Occaſion.

CHAP. XXIII.

Of Lunatick, or Moon-Eyes.

WHEN a Defluxion of Rheum has continu'd ſo long as to cauſe an obſtinate Stagnation in the ſmall Arteries of the *Tunica Adnata*, or outermoſt Coat of the Eye, and a Relaxation of the ſmall Kernels that are ſeated at each of its Angles, it becomes then very hard and difficult to be cur'd; but by the *Lentor* and Corroſiveneſs of the Matter, it at length deſtroys the Tranſparency and Clearneſs of the *Cornea*, ſo as to cauſe Blindneſs; and when this happens to a Horſe, he is ſaid to be Moon-blind. *What meant by Moon-Eyes.*

Now this Diſtemper, which goes under this Name, does not always make one continued Progreſs, but oftentimes the Rheum, in a great Meaſure, dries up; and when that happens, unleſs the Matter has been ſo ſharp as to corrode the *Cornea*, a Horſe's Eye will again look clear and tranſparent; but becauſe thoſe Parts have been ſo much weakened, and the Glands ſo much relax'd, every little Error committed either in Feeding or Exerciſe, and every ſlight Cold, and even the Sharpneſs of the Air, will cauſe a Return of the Humour; which Viciſſitudes have occaſion'd Farriers, in ancient Times, when, thro' Ignorance, much was aſcrib'd to the Influence of Planets, to attribute this Diſorder to the Moon, inſomuch that even the Sieur *de Solleyſell* being prepoſſeſs'd with the ſame Notion, very gravely ſays, " That the Eyes of thoſe Horſes which " are troubled with this Diſtemper, are darkened with a " Rheum at certain Times of the Moon, whereas at other " Times they appear ſo bright, that you would conclude

" they

" they were perfectly ſound." And afterwards he adds, " That ſome enjoy an Interval of ſix Months, others are " troubled with a Return of the Diſtemper once in three " Months, and ſome grow lunatick every two Months". But according to the ſtricteſt Obſervation I have been able to make, this Diſtemper ſeems to bear a near Affinity with that which in Man is called the *Epiphora*, reſembling it both in its Signs, Cauſe, and Effects; only that in Horſes it is more fatal to the Sight, becauſe of the prone Poſition of a Horſe's Head, which gives the Humours a ſtronger Tendency towards the Eyes.

The Cauſe. It takes its Origin, generally ſpeaking, from the Want of the common Diſcharges of the Pores of the Skin, and by Urine; and from thoſe Things that may occaſion a too great Accumulation of the *Serum* in the Blood, whether they proceed firſt of all from a Cold, or from any other Cauſe.

The Signs are alſo manifeſt, for in this Diſtemper the Eyes appear hot, ſwoln, dark, and troubled with a continual Rheum and Weeping, and according to the laſt mention'd Author, with a faint Yellowneſs under the Apple, which, as he rightly obſerves, is the ſureſt Sign, as it muſt be the conſtant Effect of exceſſive Heat and Moiſture in thoſe Parts.

The Cure muſt, as to Internals, be chiefly perform'd by Purging Medicines, and ſuch as are of the greateſt Efficacy to fuſe and melt down the ſerous Parts of the Blood; for Phlebotomy is needleſs, and oftentimes proves hurtful in this Caſe. And therefore if the Horſe be coſtive after you have opened him with a Clyſter or two, let the following Balls be given him.

" Take of the cleareſt ſhining Aloes two Ounces, Tur- " bith Root in fine Powder half an Ounce, Diagridium " two Drams, Liquorice Powder four Ounces: Make " them into large Balls with a ſufficient Quantity of freſh " Butter." Let theſe be given in Wine, or any other Liquid, to waſh them down; and for a Change, the following Purge may be ſometimes exhibited, *viz.*

" Take Aloes and Jalap in Powder, of each an Ounce " and a half, Cream of Tartar three Ounces, Diagridium " one Dram." Let this be given in a Quart of White-wine, Ale, or Beer, without warming it; becauſe if it be hot, ſome of the Ingredients, as the Aloes and Diagridium, and even the Jalap, if it be reſinous, will be apt to run into Lumps.

But

But if it be hard to get down this Medicine, becauſe of the Nauſeous Bitterneſs of the Aloes, the Jalap, Aloes, and Diagridium, may be made into a Paſte with Liquorice Powder, and a ſufficient Quantity of Butter as the other, and the Cream of Tartar diſſolv'd in the Liquor with which it is to be waſh'd down, or in ſome warm Water, after it begins to work.

The Purging muſt be repeated twice every Week, or according to the Horſe's Strength, walking him for half an Hour after his Phyſick, as is uſual; during which time his Food ought to be moderate, but yet what is neceſſary to ſuſtain Nature; for the ſtrongeſt Horſe will ſuffer by Purging, if his Food is not in ſome Meaſure proportioned to it.

And while this Method is comply'd with, as to Internals, his Eyes ought to be conſtantly wet Morning and Evening with one or other of thoſe Waters, which are the laſt inſerted in the foregoing Chapter; and three or four times a Day let them be bath'd with the following Decoction, made warm every time it is uſed.

" Take Leaves of Mallows and Marſh-mallows, of " each a Handful, Red-roſe Leaves and Melilot Flowers, " of each half a Handful; the Heads of two white Pop- " pies ſliced, and two Ounces of Fenugreek-ſeeds: boil " them in two Quarts of Water to three Pints." This will greatly contribute to blunt the Acrimony and Sharpneſs of the *Serum*.

The ſame Ingredients boil'd with five or ſix Crab-apples, and afterwards beat in a Marble or Stone Mortar, and pulp'd thro' a Sieve, will make an excellent Cataplaſm to lay over the Eye, in order to allay the Heat, and put a Check to the Influx of the Humours.

The Corners of your Horſe's Eyes may be alſo touched now and then with a little of the following Ointment, *viz.*

" Take freſh Butter four Ounces, white Wax one Ounce, " Tutty finely prepared half an Ounce, Sugar of Lead " two Drams, white Vitriol one Dram, Camphire two " Scruples: Mix and make an Ointment."

How a Moon-ey'd Horſe is to be manag'd in the Decline of his Diſtemper.

As ſoon as you obſerve the Symptoms begin to abate, let him be moderately rid every Day in ſome ſhady Place; for the Exercile will contribute to mend the Faults of his Conſtitution: But if you ride him too much in

the

the Sun, or where the Light is too ſtrong, you'll be apt to create freſh Trouble; for though the ſerous Part of the Blood may be render'd more thin and fluid, and its Acrimony much abated by the Uſe of Exerciſe, and the Help of proper Remedies, and conſequently the Moiſture leſſened, yet as the Eyes themſelves muſt be impair'd by a long and continued Defluxions, they muſt therefore have Time to recover that Weakneſs. For the ſame Reaſon, the Uſe of fit Applications muſt not be too ſoon laid aſide, but ſuch things conſtantly provided as will comfort and ſtrengthen thoſe Parts, though they ought to be of more gentle Operation than what were us'd during the Violence of the Diſtemper. Wherefore we very much recommend Decoctions of Red-roſe Leaves, Plantain, Ground-Ivy, or their diſtill'd Waters, with thoſe of Eye-bright, Chervil, Celandine, and the like, for outward Uſe; and theſe to be continued for ſome conſiderable Time: And if there be the leaſt Appearance of a Return, a ſmall Quantity of white Vitriol, or the white Troches of *Rhaſis* may be diſſolv'd in either of theſe Waters, *viz.* half a Dram of the Vitriol, or a Dram of the Troches, to four Ounces of the Water: And by following this Method, any Horſe may certainly be cured, unleſs there be ſome natural Defect in the Eye, or that it has been too much injured by the Corroſion of the Diſtemper.

What Methods are generally uſed when the Diſtemper proves obſtinate.

Moſt Farriers, when they find this Diſeaſe obſtinate, rowel a Horſe near the Eyes, and take up the Eye-veins; but in taking up a Vein, I prefer *Solleyſell*'s Method, becauſe he does not make Inciſion into the Vein itſelf, but ties it with a wax Thread, and by that Means the Communication is as effectually ſtopped. But whatever Succeſs may have been attributed to the taking up of Veins for Infirmities in the Eyes, there can be but little ſaid to countenance that Operation, ſince by tying up thoſe Veins the Return of the Blood is hinder'd; and therefore it can only be ſuppoſed to do Service where the Eye is ſhrunk, and like to periſh for Want of its proper Nouriſhment. As to Rowelling, that may indeed, and often is of Service, becauſe by it many ſmall Veſſels, both Veins and Arteries, are opened. And as the Arterial Blood moves with a greater *Impetus* than that of the Veins, the greateſt Part of the Diſcharge muſt therefore be from the Arteries; ſo that a leſſer Quantity of Blood muſt be deriv'd towards the Eye.

Some

Some make the Rowel at the Side of each Eye, which is not amiſs, when upon the Muſcles on the Flat of the Cheek-Bone. Others make a Seaton under the Poll, which is alſo very proper, and will not disfigure a Horſe, ſo much as the other. The Way to perform this is, by paſſing a large three-edg'd Needle under that Part of the Horſe's Neck where his Mane begins; or if you would rather chuſe to do it without Blood, make Uſe of a ſharp Iron almoſt red Hot; when you have pierced the Fleſh, have a large Probe-Needle in Readineſs, with a plaited Hempen Cord, or one of Hair dip'd in Wax or *Baſilicon*, to follow the Iron: This may be moved once or twice a Day, and every now and then freſh Ointment put upon it to keep it running.

But there are beſides the taking up of Veins and Rowel-ing, ſeveral other Operations made by Farriers for the Cure of Lunatick Eyes; as the giving the Fire, and cauterizing the upper Part of the Forehead; and ſome, when the Caſe has been deſperate, have had Recourſe to a very deſperate Cure, and to ſave one Eye, have put out the other, by run-ning a Needle acroſs through the Eye-Ball: But we can ſay very little in favour of theſe Operations, not only as they are both exceſſive painful and uncertain, but alſo as they have had but ſmall Approbation by thoſe who have been the beſt Judges. But there is one other, which, in ſome Caſes, may be neceſſary; and if it does not make a Cure, yet if it be well perform'd, it ſometimes affords Re-lief, and that is *cutting out the Haw*, which is only ſome Part of the Kernelly Subſtance that lies at the Corners and Bottom of the Eye, which being very much relax'd, and, as it were, ſoak'd by the continual Influx of the Rheum, at length Enlarges to ſuch a Degree, that like a Piece of Spunge, it thruſts out the under Eyelid, and thereby oc-caſions both Pain and continual Weeping.

Now when you have apply'd all things that are proper to harden and conſtringe that Glandulous Subſtance, and ſo to make it contract itſelf, but without Succeſs; and when you obſerve the Excreſcence grown ſo large that it cannot be eaſily deſtroy'd by any Application, that would not at the ſame time hazard the Eye, then Recourſe muſt be had to cut-ting, which ought to be gone about in the following manner.

How to cut the Haw out of a Horſe's Eye.

The Horſe being caſt, and ſo ſecur'd that he cannot move, you are to take a Needle arm'd with a wax'd Thread, and having pierc'd the under Eyelid below the Griſtle that ſur-

rounds

rounds it near the Corner towards the Noſe, you are afterwards to give the Thread to ſome skilful Perſon to hold, that the Eyelid may be kept open; and by this means the Excreſcence will fairly appear. The Operator muſt, then by the help of a fine Hook, take hold of the upper Part of the Excreſcence, and draw it upwards, that he may ſee all Parts to which it adheres, and with a very fine Inſtrument ſeparate firſt above from the Eye-ball, and then below from the under Eyelid; and if it grows pretty far backwards towards the Outer Corner of the Eye, another Thread ought to be drawn through the under Eyelid, about its middle, paſſing the Needle alſo under the Griſtle, that by holding back the Eyelid, it may be the more eaſily ſeparated from thence: And when it has been in this Manner freed from all its Adheſions, both above and below, it muſt be Cut as near as poſſible to the Inner Corner and Bottom of the Eye, drying up the Blood and Moiſture with a ſoft Sponge.

This Operation is perform'd by the *French*, and ſome *Italian* Farriers, but ſeldom or never by the *Engliſh*, unleſs when there is an *Ungius*, which is a hard, membranous, or rather cartilaginous Subſtance, growing to the Inner Corner of the Eye, which almoſt every Smith can take off, by paſſing a Needle thro' the upper Part of it; and when they have pull'd it gently out by the Thread, they Cut it off with a ſharp Inſtrument, or Sciſſars, and that is what our Farriers call *cutting out the Haw*; and this is indeed a more eaſy, and perhaps a more neceſſary Operation than the other.

After the Operation has been thus perform'd, the Eye may be waſh'd with red Wine, or *Aqua vitæ*; and to prevent a freſh Inflammation, which will readily enough happen after Cutting, a reſtringent Charge made with Vinegar, Bole-Armoniack, *&c.* may be apply'd over the Eye and Temples, until ſuch time as it comes to be in good temper; and a little Honey of Roſes may be ſometimes dropt into the Eye warm, which will bring the Matter to a good Digeſtion; but if there be the leaſt Appearance of a freſh Excreſcence, which is not uncommon in thoſe moiſt Parts, and eſpecially where they cannot be kept down by the application of Bandages, then recourſe muſt be had to the Vitriol Water, or the Solution of the *Lapis Mirabilis* inſerted in the foregoing Chapter; and in the mean while the Eye muſt be as little as poſſible expos'd to the Light. By all which means a great Check will be put to the Humours, and their Conflux will be much leſs for the Time to come.

Moſt

Moſt People are of Opinion that this Diſtemper is hereditary, as well as govern'd by the Moon; and therefore that it is never to be cured. It is very true, a perfect Cure is very hard to be effectuated, eſpecially when it has been of long Continuance; but I am very ſure, and ſo muſt every one who is the leaſt acquainted with the animal Oeconomy, that tho' a Horſe may naturally be of ſuch a Conſtitution, as will diſpoſe him more particularly to this Diſtemper; yet the ſame may proceed from any other Cauſe. We ſhall therefore put an End to this Chapter, by inſerting an Obſervation of one *Taquetus*, as it is recited by the Sieur *De Solleyſell*, becauſe it may be of Service to Gentlemen who breed Horſes; ſince it is more eaſy to prevent Diſeaſes by proper Keeping, than it is to remove them when once they have got ſure Footing. *Solleyſell*'s Words are theſe:

An Obſervation of Taquetus *out of* Solleyſell.

" This is an hereditary Diſtemper, and therefore great Care muſt be taken to chuſe Stallions that have good Eyes; it may alſo be occaſion'd by the Foal's eating Oats with his Dam when he is but one Year old, or younger; for by their ſtraining and endeavouring to chew the Oats, the Veins above and about their Eyes are ſtretched and diſtended; and conſequently draw too much Blood to thoſe Parts, which by the too great Quantity of Nouriſhment, are heated and render'd obnoxious either to that kind which follows the Courſe of the Moon, or to the other, which waſtes and deſtroys the Eye. I have borrowed this Obſervation from a Treatiſe concerning Horſes, compos'd by one *John Taquet*, who expreſly affirms, That the Loſs of the Foal's Eye is not occaſioned by the Subſtance of the Oats, which may be ſuppoſed to heat them, but only by their ſtraining too hard in chewing that hard ſort of Food; and to prevent thoſe fatal Conſequences, he adviſes thoſe who have Foals, to cauſe their Oats to be ground or ſtamp'd; by which Means, he ſays, they will grow ſtrong and luſty, without the leaſt Danger of Rheums, or any other Infirmity in the Eyes."

I ſhall only add to what *Taquet* has judiciouſly obſerv'd, that over-much Feeding, of whatever Kind, as it eaſily cauſes an Over-plenitude in young Horſes, who eat heartily, may therefore very readily bring Defluxions and other Weakneſſes upon the Eyes: And many of our *Engliſh* Colts ſuffer by an Exceſs of this Kind, as others do by being

ing put too early to hard Labour, and owe their Diſeaſes in the Eyes more to theſe Errors, than either to the Moon or to their Sire.

CHAP. XXIV.

Of Films, Webs, and other Diſeaſes of the Eyes of Horſes, cauſing Dimneſs or Loſs of Sight.

External Blindneſs from Films and Scars on the Cornea.

WE often obſerve, after a Horſe has been ſome time troubled with a Defluxion of Rheum, or other Diſorders in his Eyes, little thin Subſtances grow over them, ſo as to obſcure the Sight, and theſe ſometimes adhere ſo cloſely to the Eye, that it is very hard to remove them; ſometimes from the ſame Cauſes, or from ſome ſlight Wound, the *Cornea*, or horny Coat of the Eye, is render'd obſcure, that the Light cannot paſs through it; for when it is fretted by the Corroſion and Sharpneſs of Matter, and its Subſtance abraded and wore; or if that happens by any outward Accident, its Reunion may eaſily become imperfect, becauſe of its exquiſite Fineneſs, which cannot be again equally united, but, like a Darn in a Piece of fine Lawn, will appear with a viſible Blemiſh, and become more or leſs injurious to the Sight, according as the Eye has been more or leſs hurt.

The internal from the Humours, or innermoſt Parts of the Eye.

Sometimes the Cauſes of Blindneſs or Dimneſs are more internal, and, according to ſome, may proceed from a Condenſation or curdling of the Humours of the Eye; which though they be naturally clear and tranſparent, yet by exceſſive Heat they become thick and opaque, like the White of an Egg when it is boil'd. Sometimes Blindneſs is occaſioned by ſome foreign Subſtance gather'd in the watry Humour of the Eye, which at length increaſes ſo as to hinder the Light from paſſing through the chryſtalline and glaſſy Humours into the *Retina*, or Bottom of the Eye. This Defect in a human Eye is called a *Cataract*, and is the ſame which the Farriers diſtinguiſh by the different Names of a *Speck*, *Pearl*, or *Dragon*, according to its different Appearances, or according to the Progreſs it makes on the

Eye.

Eye. When it is very ſmall, and ſhows itſelf only in the Bottom of the watry Humour, it is then called a *Dragon*; if more towards the Surface, a *Speck*; and when it comes to its Maturity, and covers the whole Pupil, or Apple of the Eye, or when it is grown pretty large, it is called a *Pearl.* But there is one Sort of Blindneſs, which is as common and uſual among Horſes as any other, and that is, where there is no viſible Defect in the Eyes, but the outward Coat and Humours appear tranſparent, and without Blemiſh, and this Sort is as difficult to be removed as any; becauſe the Fault lies in the Compreſſion of the *Retina*, or Optick Nerve, by an over-great Diſtention of the Veſſels that are interwoven in it.

The Cure of external Blindneſs.

When the Eye is only cover'd with a Film or membranous Subſtance, unleſs that has its Origin from a Scar made on the clear tranſparent Part of the *Cornea*, or horny Coat, it may, and is often cured by external Applications only, and ſuch as are very eaſy and ſimple; as the Juice of Celandine, Eye-bright, and the like, dropt into the Eye; but when there is a Scar, or if the Film adheres very cloſe to the Subſtance of the Eye, Things of a more powerful Operation will then be requir'd, as the camphorated Water, or the Water made by a Solution of the *Lapis mirabilis*, as directed in the 21*ſt* Chapter; or the following *Eye-Water*, which I have often experienced to be moſt effectual, not only to clear the Eye from Films, *&c.* but do the greateſt Service in all Rheums and Defluxions, and even cure thoſe where there has been an apparent Defect on the *Cornea.*

" Take unſlack'd Lime four Ounces, and pour upon it " a Quart of boiling Water; after it has ſettled ſome " Time, and grown clear, pour it off gently from the " Lime, and then filter it through Brown Paper, and put " it afterwards into a clean Braſs or Copper Pan, and diſ- " ſolve in it one Ounce of crude *Sal Armoniack*, letting it " ſtand in that Veſſel until it turns to a very beautiful blue " Colour, then filter it as before, and keep it for Uſe. " Let four or five Drops of this Water be inſtill'd into the " Horſe's Eye every Day, once or oftner, as there ſhall be " Occaſion."

This Water will keep a long while, and is not only uſeful to the Eyes, but to waſh all old obſtinate Ulcers; and therefore may at any Time be made in a larger Quantity.

If your Horſe's Eyes be alſo hot and ſwoln at the ſame time theſe outward Defects are apparent on them, he ought to be Bled, Purg'd, and Rowell'd, according as you find him in Caſe to bear it; and by theſe Means his Sight may certainly be preſerv'd, unleſs the *Cornea* be very much injured.

There are many other Remedies to be met with in Authors, which may be outwardly uſed with Succeſs, as thoſe compoſed of the *Vitriols*, crude *Sal Armoniack*, *Camphor*, and the like, and are enough in the Acquaintance of moſt Farriers; but ſuch as are made of Shells, Powder of Glaſs, and the Powder of Flint, or of *Turkiſh* Whetſtone, can only be ſucceſsful, as their ſharp Points may tear the Subſtance of thoſe Bodies that grow over the Sight, while they roll about in the Eye; yet as theſe cannot be diſſolv'd, but often ſtick in the Corners, and in the ſoft Fleſh in the Bottom of the Eye, and thereby cauſe violent Inflammation, they are therefore not to be meddled with, unleſs when the Caſe is deſperate; for it may be often obſerv'd, that the Uſe of ſuch harſh Things, while the Defect is only in one Eye, brings it into both, by Reaſon of the conſtant Sympathy there is between them.

But we ſhall now proceed to thoſe Defects which are more internal; and though we do not propoſe a Cure for ſuch as are obſtinate, or out of the Reach of common Applications, yet we ſhall lay down the moſt certain Signs whereby they may be diſtinguiſhed, and at the ſame time adminiſter thoſe Helps that are the moſt rational in thoſe Caſes.

The Signs of internal Blindneſs.

Firſt then, If one or more of the Humours of the Eye ſhould be coagulated and thicken'd, as abovemention'd, this muſt be apparent to any one, becauſe the Bottom of the Eye, which is plainly viſible in a Horſe, or any other large Animal, muſt then be hid, and nothing can be ſeen but the Colour of the condens'd Humour thro' the *Cornea*: But this Kind of Blindneſs rarely happens, unleſs it proceed from a Wound or Bruiſe, and then it becomes incurable.

The next inward Imperfection, ſo far as it affects the watery Humour of the Eye, is ſomewhat a-kin to the former, and is very frequently to be met with among Horſes, inſomuch that ſome have been foal'd with *Cataracts* or *Pearls* on their Eyes: But as this Defect alſo lies within the *Cornea*, it is not to be cured in Horſes; for nothing

applied

applied outwardly can reach it, but what would at the ſame Time deſtroy the Eye; and therefore it is in vain that Farriers uſe corroſive Medicines to eat off Cataracts, as is commonly practiſed among them. Neither would internal Means, or any Operation avail much towards removing it, though that alſo has been aſſay'd by Mountebanks; for after a Cataract has been couch'd, as thoſe Creatures are unmanageable, it generally grows again, and the Horſe remains blind.

The Signs of a Cataract.

Cataracts are of different Colours, yellow, black, and white; yet thoſe to which Horſes are chiefly ſubject, are either whitiſh, or of a Pearl blue, or inclinable to green, and are eaſily known, becauſe in the Beginning they are but very ſmall, but grow larger, as that Matter which forms them is continually falling into the watery Humour. But there is one Sign whereby to know a Cataract, eſpecially before it is ripe; and that is, by rubbing the Outſide of the Eye; for by that Means it will a little ſhift Place.

There have been other Signs taken Notice of by all *Phyſical Writers*, as when there is the Appearance of Flies, Duſt, or Hairs, floating before the Sight. And Mr. *Snape*, in his Third Book of *The Anatomy of a Horſe*, Chap. 13. ſpeaking of the watery Humour, has applied theſe Signs to Horſes which are apt to ſtart without Cauſe. His Words are theſe.

"It is obſerv'd in Men, that if any clotted and colour-
"ed Bits or Motes ſwim in this Humour, the Shapes of
"ſeveral Inſects, as Gnats, Flies, Spiders, and the like,
"will ſeem to be flying before their Eyes, as has been of-
"ten declared by Men who have had this Affliction. I
"am therefore apt to believe, that many Horſes are not
"without ſuch kind of congealed Bits floating in this Hu-
"mour, that without any evident or external Cauſe to oc-
"caſion it, are much given to ſtart, eſpecially with their
"Head, the Repreſentation of the foreſaid Inſects moving
"before the cryſtalline Humour, which makes them fear
"ſomething or other is ſtill flying into their Eye.

"Yea, it is in human Bodies farther obſerv'd, that of-
"tentimes ſeveral of theſe colour'd Particles in the watery
"Humour do gather together, and unite ſo cloſe, that they
"grow, as it were, into a Skin or Film, ſpreading before
"the Sight of the Eye, which cauſes an abſolute Blindneſs,
"and is that Diſeaſe which Phyſicians call a *Cataract*;

" which Diſeaſe the Animal we are treating of is much " ſubject to, though we have not ſo proper a Term for it " as this is.

But a late eminent *Phyſician* has obſerved, that theſe Repreſentations cannot be occaſioned by any Kind of Matter floating in the watery Humour, becauſe the Poſition of the *Retina*, and Convexity of the *Cornea* is ſuch, that all Bodies muſt be placed at a greater Diſtance from the Eye than the aqueous Humour, or the *Cornea*, to cauſe ſuch Appearances; and therefore he ſays, thoſe Signs can only be exhibited, when the Parts of the *Retina* are over-much compreſſed by a Diſtention of the Arteries. And this may happen, and is oftentimes the Cauſe of a *Gutta Serena*, which is the laſt Sort of Blindneſs which we mentioned, *viz.* where the Eye ſeems to have no viſible Defect in it. And therefore, as that Author has obſerv'd, whenever thoſe Signs appear with a Cataract, any ſuch Cataract muſt at the ſame time be accompanied with a *Gutta Serena*; for a *Gutta Serena* is often the Concomitant of other Diſeaſes of the Eyes, but is only diſtinguiſhable as ſuch, when the *Cornea* and Humours are tranſparent.

A Gutta Serena.

The Signs.

Now I am apt to believe, there are but very few who have bought many Horſes, and have not had Experience of this Sort of Blindneſs to their Coſt. And the Signs that Mr. *Snape* has attributed to a Cataract, when a Horſe ſtarts with his Head, if that is not the Effect of Fear, it is, no doubt, to be ſuſpected as a Token of bad Eyes, and to denote that Imperfection which we are now treating of: But there is one, which is the moſt infallible, and more to be depended on than any other, *viz.* when a Horſe moves his Ears backwards and forwards, and often points them towards his Eyes, as if he wanted to drive away Flies, when there are none near him: And if he renew his ſhaking of his Ears, as often as he is turned to a new and different Light, it may be then, with very good Reaſon, ſuſpected, his Eyes are defective, tho' nothing appears outwardly upon them; and this I have oftentimes obſerv'd in Horſes that were ill-ſighted, and have known it ſometimes the Fore-runner of abſolute Blindneſs.

Theſe being the Signs of a *Gutta Serena*, and the immediate Cauſe being a Diſtention of the ſmall Arteries preſſing upon ſeveral Parts of the *Retina*, as was obſerv'd; whatever

ever therefore be the *Procatartick* Cauſe (as *Phyſicians* term it) whether from Colds, Surfeits, or from any Fault in a Horſe's Feeding, *&c.* it is very certain the Cure muſt conſiſt in all thoſe Things that are proper to open Obſtructions in the ſmalleſt Paſſages; for by that Means thoſe in the Bottom of the Eye may be removed.

The Cure.

Wherefore if your Horſe has Strength enough to bear it, he ought, in the firſt Place to be Bled, and afterwards Purged two or three Times with the Remedies preſcrib'd in the preceeding Chapter; but Rowelling muſt by no Means be neglected: And becauſe the Mineral Kingdom affords us with Medicines of the moſt powerful Operation in all ſuch obſtinate Caſes, Recourſe may be had to the Antimonial Balls directed in the Farcin, or to the Cinnabar Balls in the ſame Chapter, or thoſe appointed for the *Staggers*; which being continued for ſome Time, will, no doubt, prevent Blindneſs: But if the *Retina* be ſo much compreſs'd as to loſe all Senſation, the Caſe will be very deſperate; for this Sort of Blindneſs is ſeldom or never to be cured but in its Infancy.

CHAP. XXV.

Of a Cold and Morfounding.

A Cold and imperfect Fever.

AFTER we have ſaid ſo much in another Place concerning Fevers and Surfeits, we need not take up much of the Reader's Time in explaining the Nature of a Cold; ſince a Cold, as ſuch, is no other than an imperfect Fever, and affects the Body in many Circumſtances, as we have deſcrib'd a Surfeit, only we thought it might not be improper to tranſpoſe it to this Place, becauſe the Diſeaſes of the Lungs, which we are to treat of in the followiug Chapters, though they often proceed from divers other Cauſes, yet they have a greater Dependency on a Cold than any other Diſtemper, as a Cold more eſpecially affects the Lungs, and the Part appertaining to them.

The Cauſe of Colds.

Now the Cauſes of a Cold are ſufficiently known to every one, being produced of all thoſe things that cauſe a ſudden Stagnation of the Pores; as when a Horſe has been very much heated, and in this Condition expos'd to the ſharp Air, without being at ſome Pains to cool him by degrees, and neglecting to rub off the Sweat, which ſtrikes a Chilline ſs and Damp over the whole Body;

permitting a Horſe to drink cold Water, while extremely hot; expoſing a Horſe that is tender and well kept to the Night Air: And ſometimes many of the ſame Symptoms will happen when the Air is too much rarify'd and thin; for by that means its Preſſure is not ſufficient to force the Blood through the ſmall Veſſels of the Lungs, but will occaſion a Stagnation there, and cauſe a Difficulty of Breathing, which will be accompanied with a Cough; and this Sort, if not ſpeedily cured, is the moſt Dangerous, both as to its immediate and future Effects.

The Signs. The Signs are, Dulneſs, want of Appetite, a Cough, and running at the Noſe; and ſometimes it affects the Eyes, as we have already obſerved; and in moſt young Horſes, cauſes Swellings about the Kernels of the Throat.

The Cough proceeds from a Diſtention of the Lungs, which ſtreightens the Paſſages of Reſpiration, or it proceeds from a Defluxion of Rheum, from the Kernels of the Windpipe being then relax'd and diſtended; and when the Diſcharges from thence happen to be pretty conſiderable, it is by Farriers ſaid to be a wet Cough; but when a Horſe Coughs without any great Matter of Diſcharge, it is then call'd a dry Cough, and is look'd upon as an ill Prognoſtick.

But a dry Cough is not always a bad Prognoſtick, as they Imagine; for in the Beginning of a Cold it often happens only from the Oppreſſion of the Lungs, when the ſmalls Veſſels, towards their Extremities, are over-charg'd, inſomuch that the Air which a Horſe draws in, is not able to penetrate through their whole Subſtance, ſo as to enter into all the little Bladders, but is ſuddenly repuls'd back again, and occaſions him often to cough, while it meets with a Portion to the ſame Air, before the Action of Reſpiration is begun; and we may oftentimes obſerve the ſame Symptom in Horſes that are narrow cheſted, upon a very ſlight Cold; becauſe in that Caſe, when the Blood-veſſels are full, they have not Room for a ſufficient Elevation. But if a dry, husky Cough continue after the common Symptoms of a Cold are paſt, it is then to be very much ſuſpected as a thing that will be of ill Conſequence, as being the Fore-runner of a Conſumption. But we ſhall ſhew the Reaſon of this in its proper Place; and in the mean Time proceed to the Cure of a Cold, while it is unattended with any other Accidents than what are common.

The

The first thing to be done in a Cold, is to take a pretty large Quantity of Blood from the Neck-vein, if the Horse is otherwise in good Case, and full of Flesh; but if he be low and poor, the Loss of too much Blood may be prejudicial to him: But yet as all Colds, for the most Part, affect the Lungs more or less, Blood ought in the Beginning to be drawn away, tho' the Quantity be but small; for here it is necessary, as in all other Cases where the Blood is too viscid, to give it more Room in the Vessels.

If he labours and breathes with Difficulty, and at some times appears to be in much Pain, he may be Bled a second time; and if his Blood looks of a florid red Colour, and has little or no *Serum* in it, and the Pain still continues, after the Space of twelve Hours he may be Bled a third time, to prevent an Imposthumation in his Lungs, or sudden Death; for it sometimes happens, that Horses are seiz'd in the Beginning of a Cold with a Pleurisy, or *Peripneumony*, when no one near them knows the Cause of their Agony.

After Blooding, if your Horse be costive, as is not uncommon in the Beginning of a Cold, let him have the following Clyster.

" Take Mallows and Marsh-mallows, of each three " handfuls; Mercury and Pellitory, of each one handful; " boil them for the Space of half an Hour in three Quarts " of Water, and to the strained Decoction add half a " Pound of Treacle, coarse Sugar, or Honey, and the same " Quantity of Oil or Butter, to be injected Blood-warm, " and repeated as often as needful.

If a Lax or Looseness happens, it must not be too soon stopp'd, for sometimes the Disease terminates that Way, especially if he has been surfeited; but if it continues too long, and causes sore and painful Gripes, it must then be treated according to the Method laid down for the Cure of that Kind of Looseness which is accompanied with a Cholick.

To recover lost Appetite, which is a Symptom that attends every violent Cold, he must be exercised every Day more or less, with *Chewing Balls*, and kept to very moderate Feeding: The following *Arman* may also be made Use of, which I can promise to be much the best of its Kind.

" Take Honey of Roses half a Pound, the Inside of a " white Manchet finely crumbled, Cinnamon and Nutmegs " of each an Ounce, Gallangal, Zedoary, and Calamus " Aromaticus, of each an Ounce and a half. Let all these " be made into a fine Powder, and incorporated with the

" Honey of Roſes, adding Syrup of Lemons, as much as " is neceſſary to make it into the Conſiſtency of a thin " Paſte;" and let him now and then have the Quantity of a Walnut given him upon the End of a Bull's Pizzle, firſt ſoak'd in Water, and then beat ſoft; his Tongue muſt be pull'd to one Side, and the Pizzle put up to the Back-part of his Mouth, letting him Chew upon it afterwards.

For his Cough, let the following Drench be given him.

" Take Hyſſop-water one Pint, diſſolve in it four " Ounces of the Juice of Liquorice, otherwiſe called *Spa-* " *niſh Juice*, and two Ounces of brown Sugar-candy, take " the Roots of Elicampain, round or long Birthwort, and " Gentian, of each half an Ounce; the Seeds of Fenu- " greek and Lintſeed, of each three Drams; Gallangal " and Cinnamon, of each two Drams. Let all theſe be " made into a fine Powder, and mix'd with the Hyſſop- " water and Liquorice, after which add to it a Pint of " White-wine or Ale, and give it in a Horn.

Let this be repeated once a Day until the Cold be looſen'd, and that your Horſe begins to feed plentifully, and his Eyes look brisk and lively, and the Matter from his Noſe (if there be a Running from thence) grows thick and well digeſted. But the following will be ſtill more efficacious, and, indeed, inferior to none that can be given in this Caſe.

" Take three or four Heads of white Poppies, two Hand- " fuls of Coltsfoot, four Ounces of Lintſeed, boil them in " three Pints of Water till one is conſum'd, add to it four " Ounces of the Juice of Liquorice, diſſolved in the Hyſ- " ſop-water, as above directed, adding alſo the Powders " as in the former Preſcription.

The following Powder out of *Solleyſell* may be made and us'd upon Occaſion, which I believe will not be the leſs acceptable, that it has all the Ingredients of the Dia-pente in it.

" Take Bay-berries, Gentian, round Birthwort, Myrrh, " Flower-de-luce, Shavings of Harts-horn, and Elicam- " pain, of each four Ounces; Zedoary, Cummin-ſeeds, " Aniſeeds, and Savin, of each two Ounces; Cinnamon " half an Ounce, Cloves two Drams, Flowers of Corn- " Poppies dry'd two Ounces." The Doſe is two Ounces infus'd all Night in Wine.

The celebrated Horſe-Balls of *Markham* may alſo be given, one in a Morning, for ſeveral Days together. They are thus made: " Take

" Take Aniſeeds, Cummin-ſeeds, Fœnu- Markham's
" greek, Carthamus-ſeeds, Elicampain- *Balls.*
" Root, Flower of Brimſtone, and brown
" Sugar-candy, of each two Ounces, beaten and ſearced
" very fine. Then take an Ounce of the Juice of Liquo-
" rice, and diſſolve it in half a Pint of White-wine, which
" done, take three Ounces of the Syrup of Coltsfoot, of
" Sallet Oil and Honey, of each half a Pint. Let theſe
" be mix'd with the former, and with as much Wheat-
" flower as will bind and knit them all together, work
" them into a ſtiff Paſte, and make them into Balls as big
" as a large *French* Walnut, or as big as a Hen's Egg.

Some uſe, inſtead of the Syrup of Coltsfoot, two Ounces of the Coltsfoot dry'd and made into Powder; others add an Ounce of the Chimical Oil of Aniſeeds, which is very proper, as Horſes are much ſubject to Wind and Flatulencies in their Bowels; and many other Alterations I have ſeen which are not material.

The chief Vertue of theſe Balls conſiſts in their mollifying and ſoftening Quality, whereby they take off from the Acrimony and Sharpneſs of the Rheums, which occaſion tickling Coughs, by which means they alſo fatten ſome Horſes. But if it ſhould, upon any Occaſion, be neceſſary to make them more deterſive and cleanſing, the Quantity of the Flower of Brimſtone may be increas'd, and the Honey proportionably, or there may be added to them the Powder of the Roots of Smallage, dry'd Hyſſop, and Horſe-mint, the Tops of Fir, and the like, which will make them a moſt excellent and ſafe Scouring for Horſes, by breaking thoſe Viſcidities which obſtruct the ſmall Paſſages of the Lungs, the Liver, and other principal Bowels, cauſing Purſineſs and Difficulty of Breathing. *Their Vertue.*

But in extemporaneous, or off-hand Applications, thoſe Cleanſers which are ſufficiently known to all Farriers, *viz.* Garlik, Onions, Brimſtone, Honey, *Barbadoes-Tar*, or common Tar, when rightly adjuſted, and when a Horſe is not overmuch cloy'd with them, may be of Service; and as they are exceeding powerful in their Operation, they often ſucceed, and that very ſoon.

But in the Cure of a Cold, nothing is more material than a due Care of a Horſe's Feeding and Dreſſing, and likewiſe of his Exerciſe; and therefore beſides Moderation in his Feeding, which we have already obſerv'd to be neceſſary, whatever Food is given him ought to be ſomewhat opening,

ing, as ſcalded Bran, or Barley inſtead of Oats; and in his Water thoſe things that are diluting, and will promote the Diſcharges by Sweat and Urine, as the *Sal Polychreſtum*, *Sal Prunellæ*, crude *Tartar*, and crude *Sal Armoniack*, already deſcribed in putrid and malignant Fevers; for a violent Cold comes the neareſt to Fevers of a malignant Kind, and is often the Fore-runner of ſuch Fevers, as we may ſometimes obſerve; and therefore all thoſe things are neceſſary that help to carry off the groſſer Parts of the *Serum*, for by that Means a due and uniform Circulation of the Blood is the ſooner recovered.

And this is alſo greatly forwarded by moderate Exerciſe, *&c.* by rubbing and dreſſing; and if you find your Horſe of himſelf inclinable to ſweat, which often happens in the Beginning of a Cold, or if he lies under a heavy Oppreſſion, thoſe Diſcharges may be then eaſily promoted by warm Cloathing; and, if neceſſary, may be yet more forwarded by giving him an Ounce of *Venice* Treacle in a Pint of White-wine or Treacle-water. And *Laſtly*,

To prevent the Running at the Noſe turning to the Glanders.

If the Running at the Noſe be likely to continue too long after the other Symptoms are in a great Meaſure gone off, let him have once a Day, for ſome Time, a Decoction made with three or four handfuls of Red-roſe Leaves, an Ounce of Pomegranate Bark, and an Ounce and a half of *Diaſcordium* diſſolv'd in it, and let his Noſe be often ſyring'd with ſome of the ſame Decoction, or with Honey of Roſes, which is much the ſame; and by following this Method, you may prevent it turning to the Glanders, unleſs your Horſe be alſo conſumptive; in which Caſe it will be very hard to put a Stop to it.

CHAP. XXVI.

Of Cheſt-foundering, &c.

Cheſt-foundering bears an Affinity to a Pleuriſy.

THE Diſeaſe that goes under this Denomination in Horſes, comes the neareſt of any to that which in a human Body is called a *Pleuriſy*, or *Peripneumonia*, which is an Inflammation of the Lungs or *Pleura*, accompanied with Pain and Difficulty of Breathing,

The Cauſe.

The Cauſe is from all the ſame things that produce a Cold, as expoſing a Horſe when he

he is hot to the cold Air, riding him at that time into cold Water, or letting him have cold Water to drink; and therefore it is ſometimes introduc'd by a Cold.

Sometimes it proceeds from a Horſe's eating unwholſome Hay, and bad Provinder, or his Feeding on cold frozen Graſs in Winter, eſpecially if he has not been us'd to it; but the moſt common and ordinary Cauſe, is the over-riding a foul-body'd Horſe that has not been accuſtom'd to Exerciſe, for then his Blood being agitated, and put into a more than ordinary degree of Motion, paſſes forward into the Lungs or Pleura in great Quantity, and very much diſtends the ſmall Veſſels there, but becauſe of its Viſcidity it ſuddenly ſtagnates, and occaſions Pain and Inflammation, with the other Symptoms we have already mention'd. And therefore young Horſes, as their Bodies are moſt apt to be Foul, and their Blood of unequal Fluidity, are the moſt liable to Cheſt-Foundering.

The Signs.

The Signs are, an exceſſive heaving of the Flanks, ſtarting with Pain as often as he offers to move; when violent, it is always accompanied with a Fever; but as the Fever is only an Effect of the Inflammation, it goes off as ſoon as that is removed.

The Cure of Cheſt-Foundering, and foundering of the Body.

But a Horſe is often ſaid to be Cheſt-foundered in his Body, when there are no viſible Symptoms of much Pain, only an Oppreſſion; but as this even proceeds from the ſame Cauſes, and as it produces many of the ſame Effects, as breaking the Horſe's Wind, melting his Greaſe, and all other Diſeaſes that follow ſuch an Oppreſſion on the Lungs, and other Bowels, it ought, in the Cure, to be treated much after the ſame Manner as if there was Pain and Inflammation, only that Blooding may be more ſparingly us'd; for when there is ſuch an Oppreſſion that a Horſe cannot Breathe, but is like to be ſuffocated, then Blooding muſt be repeated, as the leſſer Evil.

And in this Caſe I would always recommend opening the Flank-veins, or thoſe of the Inſide of the Thigh, to make a Revulſion, which will be found much more ſafe, and anſwer the End much better than Bleeding in the Neck or Plate-veins, as is uſually practiſed in ſuch Caſes, for this often cauſes a greater Derivation upon the Lungs or Pleura.

And becauſe a Cheſt-founder'd Horſe has oftentimes a great inward Heat and Coſtiveneſs, eſpecially in the Beginning, he ought to have an emollient Clyſter given him, as

that

that inſerted in the preceeding Chapter for a Cold, which may be repeated as often as there is Occaſion; and if there be no Symptoms of Pain, but only Heavineſs and Oppreſſion, which does not hinder a Horſe from lying down, nor keep him altogether from Feeding, the Method we have laid down for the Cure of a Surfeit is to be followed. And if he be alſo addicted to a Cough, the Remedies for that Intention are likewiſe to be made uſe of.

But if you find him in Pain, and full of Agony, after he has been Bled, and had a Clyſter injected, let the following Drench be given him to promote Sweat.

" Take Milk-water one Pint and a half, Treacle-water " half a Pint, diſſolve in the Treacle-water ſix Grains of " Camphire, afterwards add an Ounce and a half of *Venice-* " *Treacle*, or Mithridate, or two Ounces of *London Trea-* " *cle*, mix all together, and give it your Horſe thro' a Horn.

Afterwards let him be walk'd a little, and well cloath'd; and when he is inclinable to drink, let him have warm Water ſtrew'd with Oatmeal.

When thoſe things are done, let one of the following Balls be given him twice a Day, one in the Morning, and another in the Afternoon, an Hour before Watering Time.

" Take Conſerve of Red-roſes two Ounces, *Sperma Ce-* " *ti* one Ounce, Linſeed and Fenugreek-ſeeds in Powder " of each an Ounce and a half, Liquorice Powder two " Ounces. Let theſe be made into four Balls, with ſweet " Oil, or Oil of Sweet Almonds, as is ſufficient.

The Uſe of theſe muſt be continued for ſeveral Days; and when the violent Symptoms are abated, he may, by Degrees, be inur'd to Exerciſe, which, with a cleanſing Diet, will perfect the Cure.

CHAP. XXVII.

Of Purſive, Broken-winded, and Conſumptive Caſes.

IT is ſufficiently known to any one who is the leaſt acquainted with the Animal Oeconomy, that whatever cauſes an over-great Influx of Blood into the Lungs, and other Parts adminiſtring to Reſpiration, will occaſion a Heaving of the Flanks, and Difficulty of Breathing; and therefore there are very few Diſeaſes of any Kind, but what are accompanied

panied more or less with those Symptoms. But the Diseases that come under our present Consideration, are such as have their chief and principle Seat in the Lungs, proceeding from an Ulcer, or some inward Wasting, whereby the small Vessels are wore and abraded by the Acrimony and Sharpness of the common Discharges, or from some obstinate Stagnation, hindring the Air from penetrating, so as to elevate and lift them up in the Action of Respiration, or when there is tough mucilaginous Matter separated in the Branches of the Windpipe, for all such Things will occasion a very great Disturbance in the Flanks of a Horse; and when a Horse has any of those Infirmities upon him, he may justly be term'd Pursive, or Broken-winded.

Consumptive and Broken-winded Cases, proceed from some Disorder of the Lungs, &c.

The Cause is from Colds, Surfeits, and other Diseases that have never been thoroughly carried off, but chiefly obstinate Colds, for by them the Lungs are in a more especial Manner affected; and therefore whatever brings on a Cold, or other Diseases affecting the Lungs, may be look'd upon as the *Procatartick*, or remote Cause of Broken-wind, or Pursiness. The eating of unwholsome Food, and feeding in a bad Air, also bring on these Disorders: But many Horses have their Wind broke by ill Usage, as hard Riding when they are full, for by that Means their Blood is thrown into the Lungs, with so much Impetuosity, and in such Quantity, that it suddenly causes Foundering and Inflammation, which is oftentimes followed with an inward Abscess, or Ulcer, which proves incurable.

Caus'd by Colds and other Diseases affecting the Breast, and from hard Riding.

The common and usual Signs are, a heaving and beating of the Flanks, sometimes a wheezing and rattling; and in some desperate Cases, a swelling of the Kernels about the Throat, and a glander'd running at the Nose.

The Signs.

But here it is to be observ'd, that some Horses may be Pursive and Short-winded, and exhibit several of these abovemention'd Signs, and yet their Case not dangerous, nor properly to come under the Denomination of a Broken-wind, or Consumption; for some Horses are naturally thick-winded, especially those that are great and foul Feed-

Several Cases wherein a Horse may be Pursy, and exhibit other Signs of a broken Wind, and yet be free from that Distemper.

ers,

ers, for by that Means their Blood is, for the moſt Part, groſs and viſcid, and paſſes with ſome Difficulty through the ſmall Veſſels of the Lungs, which being alſo frequently preſs'd by a full Stomach, will not only occaſion Purſiveneſs, but ſometimes a Cough; yet as ſuch are very apt to turn broken-winded, they ſhould be kept to ſpare and clean Feeding, or have conſtant and daily Exerciſe.

Moſt young Horſes that have been habituated to Eaſe, will blow upon the leaſt Exerciſe, eſpecially if they be fat; and that proceeds alſo from a thick and plentiful Blood; but it is very well known, that if ſuch Horſes are not over-labour'd while in this Condition, but by Degrees harden'd and inur'd to Exerciſe, thoſe Symptoms will ſoon vaniſh; and if the Helps of Phyſick are required, their Diſorders may ſpeedily be remov'd by Bleeding, and very moderate Scouring.

Horſes that are poor, and in a low Condition, when they are exerciſed beyond their Strength and Feeding, will alſo heave and labour, as if they were broken-winded; as alſo thoſe that have been ſick, or lie under ſome Diſtemper that waſtes their vital Spirits, though their Lungs are perfectly ſound; or if a Horſe has had any immoderate Diſcharges by Blood or Dung, any of thoſe will cauſe a Horſe to heave and labour for Breath, as if he was broken-winded: But as in all theſe Caſes this ſeeming Oppreſſion proceeds only from a Scarcity of Blood and Spirits, there not being what is ſufficient to actuate and elevate the Lungs and Cheſt, the Symptoms wear off by good Care and Feeding.

And *Laſtly*, We may obſerve ſome Horſes, that have no inward Infirmity, blow and wheeze, from an Imperfection in the Paſſages between the Mouth and Noſe, which happens the more readily to Horſes, as they draw in and expel their Breath chiefly at the Noſe; but that Imperfection is eaſily diſtinguiſh'd, for albeit his Flanks move like a broken-winded Horſe, while he is in Action, yet as ſoon as he is ſtopp'd, that Agitation goes off, and nothing farther is to be taken Notice of in his Breathing but what is natural. And there are ſome Horſes ſhort-winded from the Narrowneſs of their Cheſt, which is plainly diſcernable as often as they are put to gallop, or to any Labour. But where that Defect proceeds from ſome Imperfection of the Lungs, it is eaſily enough diſtinguiſhed; becauſe in all Caſes where the Lungs are hurt, tho' a Horſe's Flanks will

will heave and work most impetuously upon Exercise, yet even when he stands in the Stable, there is no Interval free from that Agitation, but he still labours more or less.

What Horses are properly defective in their Wind.

Now a Horse is said to have his Wind touch'd or broke, according to the Nature and Degree of Efficacy in the Distemper; for some Horses will last a great while with Infirmities of this Kind, and continue at the same Pass, and do abundance of Service, and yet be absolutely incurable; some waste and decline gradually, and others very suddenly; all which we shall endeavour to explain.

The Disorders that affect the Wind of a Horse, yet not so as to cause a sudden Waste and Decay, are chiefly of two Kinds.

In the *First*, Tho' a Horse has no Intervals free from a Working and Agitation of his Flanks, yet if he coughs but seldom, and has no Moisture proceeding from his Nose, nor does waste in his Body, it is a Sign that his Infirmity proceeds from some obstinate Obstructions in the small Vessels of the Lungs, or from chalky Matter ingender'd in them, which hinders the Air from passing into all the little Air Bladders, so that they cannot be fully inflated and distended, or it may be caus'd by some Adhesion to the *Pleura* and *Ribs*, for then the Lungs cannot be sufficiently depress'd; and a Horse in this Condition must have his Nostrils frequently contracted in sucking in the Air, but will never Breathe out freely.

The next is different from the former, and shews itself by other distinguishing Signs; for, as in the first Case, a Horse seldom coughs but when in Exercise, or when his Stomach and Guts are full; in the last, a Horse will cough pretty often, but especially upon every slight Cold, and at the same time is frequently troubled with a Wheezing, and Rattling in his Pipes; all which proceeds from a thick mucilaginous Matter sticking in the Branches of the Wind-pipe, that not only must occasion frequent Coughing, but also cause a constant heaving and working of the Flanks.

The Disorders that cause a total Decay, and which may not improperly be said to constitute a Consumption, are also reducible to two Kinds: The first is, when there is a Waste occasioned by an Over-relaxation in the glandulous Parts, and a too great Discharge of the Juices, which

which are only allotted to keep the Lungs moiſt; and the ſecond is, when there is an Ulcer formed in them. And theſe are diſtinguiſhable from the former in this, that where-ever there is a Decay, either by an Ulcer, or by ſuch a Waſte as we have been ſpeaking of, a Horſe will be able to bear no Manner of Exerciſe without a Sinking and Lowneſs of his Spirits; and as his Diſtemper continues, loſes Fleſh, turns flabby, and is ſubject to hectick Diſorders; whereas in the other Caſes, a Horſe will go through a Journey, or perform any other Exerciſe, if he be well us'd, without any conſiderable Infirmity, excepting that of his Flanks. However, as this Diſtinction is not ſo eaſily made in a Beginning Conſumption, while a Horſe as yet retains ſome Strength and Vigour, his Cough ought therefore chiefly to be obſerved; for if that be ſhort and vehement, or hollow and ſounding, it is then very much to be doubted; for ſuch Coughs as theſe generally attend where there is an Ulcer in the Lungs, or where there is a conſtant Waſte, by the Superfluity of the common Diſcharges.

The Cure. But we ſhall now proceed to the Cure: And firſt of all, as to thoſe Defects in the Wind of a Horſe, which are caus'd by obſtinate Obſtructions in the ſmalleſt Arteries, or chalky Matter, *&c.* though we do not propoſe any abſolute Relief in ſuch Caſes, as we ſcarcely imagine any thing can be exhibited, either to penetrate through hard and obſtinate Obſtructions, or diſlodge foreign Matter ingender'd in the Lungs, or remove Adheſions, that perhaps have been begun before the Horſe was foal'd; yet becauſe a Horſe may ſtill be of Service, notwithſtanding theſe Infirmities, he ſhould now and then have ſuch things given him as are gently opening, and are fit to lubricate all the Paſſages, and render them glib and eaſy; for which Purpoſe we recommend *Markham*'s Balls, or any Compoſition of the like Ingredients; he may alſo ſometimes have a little clean Antimony given him.

Feeding and Exerciſe. But the principal Thing to be obſerved, is the common Feeding and Exerciſe of ſuch Horſes; tho' I need not lay down any Method for it, becauſe every one knows that the ordinary Rules are to be obſerved in the ſtricteſt Senſe, with reſpect to broken-winded Horſes. For albeit Exerciſe is as neceſſary to them as to any other, yet when it is in the leaſt im-

immoderate, or if it be given upon the Stomach, its Effects are for the most Part very bad; and he that would give such an Horse much Water to drink, or keep his Rack constantly full, must be but a very young Groom: For when the Stomach is full of Hay or Water, as it lies upon a Level with the Lungs in all such Creatures, it is the more apt to press forwards upon the Midriff, and hinder the Action of the Lungs, which cannot but be very troublesome in all Cases where they are any wise defective, as we daily observe in pursive and broken-winded Horses.

As to those Horses who have thick mucilaginous Matter obstructing the Pipes, and whose Lungs must also be very humid, and, as it were, more relaxed than natural; albeit the same Rules are to be observed in their Oeconomy of Diet and Exercise, as in the former Case; and though the same Remedies are also very proper, yet because this Distemper is sometimes more violent by Fits than at other Times, and may therefore require Medicines of more powerful Efficacy; besides Blooding, which is necessary when the Oppession is upon him, the following Balls may be given with good Success.

" Take Galbanum and Gum Ammoniacum, of each a " Quarter of a Pound, Burdock-root half a Pound; first " beat them well in a Mortar with two Ounces of the " Flowers of Benjamin; then add by Degrees sweet Oil, " until you bring them into a Paste fit to be made into " Balls weighing two Ounces each. Let your Horse have " two of these every Day, one in the Morning, and another " in the Afternoon, two Hours before Water, keeping him " ty'd up to the Rack all that while.

The following Balls may be also given with good Success, and may be easily procured at all Times, and almost in all Places.

" Take four Heads of Garlick, an Ounce of Horse-radish, " stamp them in a Mortar; then add an Ounce and an half " of Flour of Brimstone, and work them into a Mass " with as much sweet Oil as is sufficient: Let these be " made into two Balls, one to be taken in the Morning, " and the other in the Afternoon, as above-directed.

All the Remedies prescrib'd in a Cold, are also profitable and useful in this Case; and he may have sometimes scalded Barley instead of Oats; and nothing will be more proper than Barley boil'd in his Water with Liquo-

rice, which he will drink with Pleaſure after he has been uſed to it.

We now proceed to the Cure of thoſe Horſes that are broken-winded and conſumptive, which is only to be attempted in the Beginning, and before they begin to fall much away; for Horſes in this Condition will often eat to Exceſs, and keep up their Body that Way, if they are not put to daily Labour; and becauſe a proper Diet in this Caſe is the moſt likely to ſucceed, he ſhould, in the firſt Place, be reſtricted from eating too much Hay, and from drinking too much Water, eſpecially at a Time, and that for the Reaſons already alledg'd; for what he wants in this, may eaſily be made up another Way.

Therefore let the Mixture of Linſeed and Fenugreek-ſeeds be given him frequently in his Corn, and ſometimes a few of the greater hot Seeds, as thoſe of Fennel, Caraways, and Aniſe; in his Water may be boiled three or four Handfuls of Barley, with a little Liquorice or Honey diſſolv'd in it; but he muſt not be uſed conſtantly to the Liquorice, eſpecially if he appear to waſte very much, for it may in that Caſe prove over deterſive.

He ought to have Exerciſe more or leſs every Day; but that muſt be moderate, and only when the Weather is clear, for by this Means the Toughneſs of the Blood is broke, and all the Diſcharges kept free and open.

If he be at any Time ſeized with an Oppreſſion, and a more than ordinary Difficulty of Breathing, he ought to have a Vein opened in his Flank, or on the Inſide of the Thigh, from whence may be taken a ſmall Quantity of Blood; but this muſt be only gone about when there is abſolute Neceſſity for it.

The following Balls may be given, and continued with good Succeſs, *&c*,

" Take of Myrrh and Gum Benzoin of each four Ounces,
" Gum Arabick, the Roots of Orrice, round Birthwort,
" and the Shavings of Hartſhorn or Ivory, of each two Ounces, Galangal and Zedoary of each an Ounce, Fennel-
" ſeeds, Cummin-ſeeds, and Fenugreek, of each an Ounce
" and a half: Let theſe be beat into a fine Powder, and
" made up into a ſtiff Paſte with Honey, or Syrup of Colts-
" foot, then work into the whole an Ounce of the common
" Balſam of Sulphur, and let them be made into Balls the
" Bigneſs of a large Walnut, whereof one is to be given
" every Morning and Afternoon, an Hour before Watering
" Time.

All

All pectoral Herbs, as Maiden-hair, Colts-foot, Rocket, Scabious, and the like; all healing Balsams and Gums, and all the Remedies directed in this and the two preceeding Chapters, may be profitably given in Broken-winded, consumptive Cases. But if your Horse, notwithstanding these Helps, turns Poor and Emaciate, low in his Spirits, and addicted to sweat, heaves to his Chine, and, with a reduplicated Motion, farts much and often, coughs and rattles, sounds hollow, and looks ghastly, with his Eye-pits fallen, you had better give him to the Crows, than be at the Expence of his keeping, for his future Services will never be answerable to it.

CHAP. XXVIII.

Of the Glanders and Mourning of the Chine.

THE *Glanders* is a Flux or running of corrupt Matter from the Nose of a Horse, which is of different Colours, white, yellow, green, or black, according to the degree of Malignity, or according as it has been of a long or short continuance.

Concerning the Nature and Cause of this Discharge, Authors have given very strange and unintelligible Accounts; some have ascrib'd it to the Lungs, some to the Spleen, some to the Liver and Kidneys, and some to the Brain; and when it has continued so long that the Matter becomes of a blackish Colour, as is usual in its last Stage, they have imagined it to come from the Spine; and from thence have called it the *Mourning of the Chine*. Mr. *Snape*, in his Anatomy, has taken Notice of the Farriers Mistakes concerning this Distemper; and altho' there are some things in his Account of it that are liable to Exception, yet because it is much more rational than any thing has hitherto been advanc'd upon the Subject; and likewise because the Authority of so eminent a Farrier may, no doubt, weigh with most Readers, we shall therefore give it a Place here.

Mr. Snape's *Account of the Glanders and Mourning of the Chine.*

That Author having in the 5*th* Chapter of his 3*d* Book shewn the Use of the *Glandula pituitaria*, and that there can be no Discharge from it into the Nose, falls into the following Digression concerning the Glan-

ders; wherein he obſerves, that the Matter which iſſueth ſo plentifully out of the Noſes of Horſes that have got great Colds, or are glandered, falls not, as he himſelf had ſome time believed, from the Brain, but that it was ſeparated from the arterial Blood by the Glands or Kernels of the upper Part of the Inſide of the Noſe, which, he ſays, is the more readily to be believed, becauſe the other Glands are ſwell'd at the ſame time, and particularly thoſe under the Horſe's Jaws, that being one of the moſt certain Signs of a Horſe's inclining to the Glanders. But he goes on in the following Words: "And this may ſerve to convict of Error "all our ancient Authors, who did hold (and our Practi- "tioners, who at this Day do hold) that the Glanders "proceed from a Defect and Waſteing in the Brain; and "that all that ſnotty Matter comes from thence, which "iſſues out of the Noſe; which, were it ſo, all the Brain "in the Horſe's Head would not be ſufficient to ſupply it "with Matter for three Days, according to the Quantity I "have ſeen come from one in that Time. It is therefore a "very falſe Opinion, taken up meerly upon gueſs, with- "out inſpecting into the Parts, that our Practitioners do "commonly entertain concerning this Diſeaſe.

"Neither is there ſuch a Diſeaſe as the *Mourning of* "*the Chine*, as they do to this Day hold; for it is impoſ- "ſible any Creature ſhould continue ſo long alive, as till "all his Brain be ſo far waſted by this Diſeaſe, that it "comes to reach the Spinal Marrow without the Skull, "which is that, I ſuppoſe, they call the *Chine.*

"But this Diſeaſe, by them called the *Mourning of* "*the Chine*, is diſtinguiſhed into a different Diſeaſe from "the former, from the Matter's altering its Colour; for it "is generally obſerv'd, that after a Horſe hath had this "Diſeaſe running on him for ſome time, the corrupt Mat- "ter or Snot, changes by degrees from an indifferent white "to a more dull Colour, inclining at firſt to a little red- "diſh, but after a longer Time, eſpecially when a Horſe "begins to grow towards his End, it will be very black, "and very nauſeous both to ſee and ſmell.

"From this alteration of the Colour, as I have ſaid, I "do believe they give the Diſeaſe this proper and diſtin- "guiſhing Name of *Mourning of the Chine*; whereas it "is only a greater degree of one and the ſame Diſeaſe, in "which the Chine is not at all affected, at leaſt no more "than any other Part of the Body, all of which languiſhes

"away

" away by this inveterate Diſtemper. By what Steps it " proceeds, and how the Matter comes to alter its Colour, " I will give you my Opinion.

" The Maſs of Blood being depraved, either by un- " wholſome Food, or by great Colds, or, laſtly, by In- " fection from the Air, and from other Horſes (for this " Diſtemper is catching) this phlegmatick Matter collect- " ed in it, is ſpued out of the Ends of the Arteries in the " upper Part of the Noſtrils, about the ſpongy Bones chief- " ly; for in an Horſe there is little of this Matter comes " out of the Mouth, but it ſtill deſcends by the Noſtrils. " This Humour, I ſay, diſtilling out of the Arteries by " the ſpongy Bones continually, doth in proceſs of Time " ſo fill the ſaid Bones with filthy Matter, that, like a " Sink or Chanel, being choaked up with Filth, there is " not ſo free a Paſſage for the Humour, as when the Diſ- " eaſe firſt began; ſo that the Matter by that means is " there ſtay'd, and by its continuance there, it acquires ſo " bad a Quality, that it corrodes and cankers thoſe Bones, " and indeed ulcerates and gangrenes all the Paſſages of " the Noſtrils, till it has mortify'd and conſum'd them (as " happens ſometimes to venereal Perſons) and at length de- " ſtroy'd the Beaſt; for indeed it is ſeldom or never cura- " ble, when it is once come truly to be a Canker.

" Now by the Foulneſs of theſe Bones (as I have ſaid) " that Matter or Snot which doth deſcend by theſe Paſ- " ſages (which indeed doth at length drivel down in a " greater Quantity than before, by reaſon of the Paſſages " being widen'd, from the Parts being gnawn aſunder by " the canker'd Humour) I ſay, that Matter or Snot, " which deſcends after this, is of a contrary Colour to " what it uſed to be; for it is become more black and " wateriſh, mixed with a little red, and hath a very ill " Smell; but this Alteration happens not from the Mat- " ter's flowing from a new Part, but is cauſed by reaſon of " the Foulneſs of the Parts through which it paſſeth; for " from thence it hath its Dye in a great degree.

" Not but there is yet another Cauſe of it, which is the " greater foulneſs of the Blood; for as the Beginning of the " Diſtemper did proceed from the Corruption or Depra- " vation of the Blood, which was become, as it were, de- " generate from its ſpirituous, balſamick, and volatilized " Condition, into a flat and vapid State, like to dead Wine; " ſo in proceſs of time, for want of the Spirits to quicken

 " it,

" it, and cauſe the Fermentations neceſſary to the proper " Places of the Body, where the excrementitious Parts of " the Blood ſhould be thrown off, ſuch Excrements are " collected every Day in a greater Quantity, and acquire a " greater Degree of Malignity, being hardly any Part of " them diſcharged any other Way but this, which is pre- " ternatural, and moſt times becomes deſtructive to the " Beaſt, after the Diſeaſe hath arriv'd to the Height.

Some further Obſervations concerning the Glanders, &c.

But we ſhall here ſubjoin, to what Mr. *Snape* has ſaid concerning the *Glanders*, ſome few Conſiderations that will make this Matter yet more intelligible; and in order thereunto, the Reader would do well to conſider that an Ulcer, or an Abſceſs form'd in any Part, from whence there may conſtantly be derived a very large Diſcharge of Matter, will ſoon bring the Body into a weak and debilitated State, by depriving it of its neceſſary Suſtenance and Support; and this we find by daily Obſervation, both in human Bodies, and in brute Creatures.

Nor does this happen by Reaſon of the Quantity of Matter alone that iſſues from thoſe Parts, but as it cauſes an over-great Determination of the Blood towards the ulcerated Part, which leſſens the common and ordinary Diſcharges by the Glands and Pores of the Body; for by this Means the Blood is render'd more viſcid, and unapt to Motion, and (as the above-mention'd Author obſerves) it loſes its Spirits; and therefore it very readily ſtagnates in the ſoft Parts, and where the Blood-veſſels are very ſmall, as in the Lungs, Kidnies, *&c.* forming Ulcers in them alſo. And for this Reaſon it very often falls out, that glander'd Horſes turn conſumptive, and conſumptive Horſes turn glander'd. And this has brought Farriers into different Opinions concerning the Glanders, becauſe moſt glander'd Horſes, after they were open'd, have been found defective in one or more of their Inwards.

But to underſtand the Nature of this Diſtemper aright, it will be neceſſary to conſider, that it takes its Beginning, and has its chief Seat in a little ſoft ſpongy Fleſh, which is eaſily dilated by the leaſt Influx of Blood; and therefore we ſometimes obſerve a Running at the Noſe in ſome Horſes from a very ſlight Cold; but when this Subſtance happens to be very much relaxed, any one may, without much Difficulty, imagine how the Running will be apt to increaſe.

But

But that this may yet be the more readily apprehended, we ſhall conſider it in all its different Stages. *Firſt*, As it is a ſimple Running; *Secondly*, As it becomes an Ulcer: And under this Head it may be alſo conſider'd in a twofold Reſpect, as it is an Ulcer in the Fleſhy Parts, and as it becomes an Ulcer in the Bony Parts. And tho' this be only an advanced Degree of the ſame Diſeaſe, yet we have made this Diſtinction in Compliance with thoſe, who, in its laſt Stage have call'd it the *Mourning of the Chine*.

The Glanders conſider'd in all its Stages.

Now this Diſeaſe at firſt is no other than a Superfluity of Matter proceeding from the ſoft ſpongy Fleſh in the upper Part of the Noſe, and that it is cauſed by an over-great Plenty of Blood from the Arteries into thoſe Parts; for by this Means that glandulous Fleſh becomes inlarged: And whereas in its natural State there is nothing ſeparated from it but a little Moiſture, which in Horſes is hardly perceivable, and ſerves chiefly to refreſh thoſe Parts which are the Organs of Swelling; yet now that the Glands are dilated and ſwell'd, there is a conſiderable Quantity of Matter continually diſcharged from their Excretory Ducts.

And whether this proceeds from a Cold, or from the Strangles, or from Infection, or an inward Waſte and Decay, it will ſoon degenerate into an Ulcer, and the Matter being pent up with thoſe Paſſages, muſt eaſily acquire a more than ordinary Degree of Putrefaction, whereby it turns corroſive, waſtes and deſtroys the Veſſels; ſo that inſtead of that ſuperfluous Diſcharge which was in the Beginning of the Diſtemper, from the common Paſſages of the Gland, the Matter now proceeds from the ruptur'd and torn Veſſels; and therefore if the Horſe lives until the Glanders turn to an Ulcer, the Matter is frequently ſtreaked with Blood.

But in the laſt Stage of this Diſtemper, the intolerable Stench, and a diſcolour'd Corruption, denotes the Bones to be ulcerated as well as the Fleſh; and how this may happen, is not difficult to be conceiv'd, eſpecially if it be remember'd, that the Bone, in which the ſpongy Fleſh is ſeated, is alſo itſelf very ſpongy. Now as this Bone is open and full of Pores, it muſt eaſily become a fit Receptacle for a more than ordinary Quantity of the common Juices; and when theſe are perpetually falling into it, changing its Nature from that of a Bone, it turns into a *Caries*, and becomes like dead mortified Fleſh, ſo that all the Matter that comes from thence is of an aſhy or black Colour; and when

it has been of ſome Continuance, it alſo waſtes and deſtroys the Paſſages of the Noſe, as Mr. *Snape* has obſerved.

No Wonder then that the Cure of the *Glanders* becomes difficult, as it is thus circumſtanced; for beſides the inward Waſte and Decay, which is ſometimes the Cauſe of it, and is for the moſt Part or always the Effect of it, as it is ſeated out of the Reach of proper Applications, and in ſuch Parts as we have obſerved to be of a very looſe and open Structure; therefore the leaſt Running from the Noſe of a Horſe, unleſs he be otherwiſe in good Order, is very much to be feared; but eſpecially if it be remember'd what we have elſewhere taken Notice of concerning the dependent Poſition of a Horſe's Head, whereby he is render'd liable to many ſudden Diſorders, as the *Vertigo*, *Staggers*, &c. and to frequent Diſeaſes of the Eyes; we may upon the ſame Footing eaſily imagine how he may alſo become glandered, if once the Blood happens to be determin'd in an over-great Quantity into the ſoft and glandulous Subſtances about the Noſe and Throat.

But although the Cure of the Glanders is hardly to be attempted in its laſt Stage, or even when it is turn'd to an Ulcer, or indeed in any Circumſtance, when a Horſe is inclinable to be Conſumptive; yet that we may not be thought wanting of thoſe Helps that are neceſſary for ſo common a Diſeaſe, we ſhall lay down ſuch Rules as are to be obſerv'd, and preſcribe ſuch Remedies as are the moſt appropriated to every Degree of it.

The Cure. And therefore, in the Beginning, if the Running be ſimple, ſuch as may proceed from a Cold, and continues too long, if the Horſe has Strength, he may be purged once or twice, or oftner, with the following Drench.

" Take the Roots of common Burdock ſliced one " handful, of Guaiacum and Saſſafras Wood, of each " half a Pound, Monk's Rhubard four Ounces, *Sena* one " Ounce, Jalap bruiſed two Ounces, ſweet Fennel-ſeeds or " Aniſeeds an Ounce and a half. Boil the Burdock-" Roots and the Woods in two Quarts of Water for the " Space of a whole Hour; after which put in the other " Ingredients; and to a Quart of the ſtrained Decoction " add a Quarter of a Pound of Honey: Let this be given " in the Morning with the uſual Precautions; and let his " Water alſo be warm, and ſweeten'd with Honey.

" Take

" Take Jalap and Aloes in fine Powder of each ten " Drams, Salt of Tartar half a Dram; make them into " two Balls with a ſufficient Quantity of Wheat-flour and " Butter. To be given as the former.

After the Operation of the Phyſick, let him have a Decoction of the Red-roſe Leaves, with an Ounce and an half or two Ounces of *Diaſcordium* diſſolved in it, which will greatly contribute to abate the Running at the Noſe; and while it is only in this firſt Stage, a little of the ſame Decoction, without the *Diaſcordium*, but ſweetened with Honey, will be ſufficient to inject into the Noſe.

And becauſe all thoſe things that are proper to promote a Breathing thro' the Pores will alſo conduce to the ſame End, therefore one Pound of Guaiacum, half a Pound of Saſſafras, with Four Ounces of Liquorice, may be boiled in Water for his ordinary Drink.

But if you cannot bring him to drink his Decoction, the Woods may be given in the Way *Solleyſell* uſes them for the Farcin; which is thus:

" Infuſe ten Ounces of Guaiacum-wood, or for Want " of that, that of Box-wood, in nine Pints of Water; and " after they have ſtood twelve Hours in Infuſion in hot " Aſhes, boil them with a gentle Heat in a cover'd Veſſel, " to the Conſumption of a third Part of the Water, then " ſtrain out the Liquor, and give your Horſe a Quart a " Day for eight Days together, keeping him Bridled three " Hours before, and three Hours after every Doſe.

But there is no Need to keep a Horſe ſo long bridled after this Decoction, but he may be fed within an Hour, or an Hour and half; and before his Corn he may drink Water wherein Liquorice has been boiled, or Honey diſſolved.

If the Running does not abate, or if you obſerve the Kernels under his Jaws to be very hard and ſwell'd, you may apply the following Cataplaſm.

" Take half a Pound of Linſeed, four Ounces of the " Seeds of Fenugreek, reduce them to fine Powder, and " boil them over a clear Fire in a Quart of Vinegar, to the " Conſiſtence of a Poultice, keeping conſtantly ſtirring, " and when it begins to thicken, add half a Pound of Oint- " ment of Marſh-mallows, and apply it hot to the Ker- " nels, covering the Part with a Lamb's Skin.

This muſt be done for ſeveral Days, and if the Horſe be not far gone in the Diſtemper, it will either diſſolve the

Kernels

Breaking of the Kernels under the Jaws ſometimes neceſſary.

Kernels or break them, which will be of very great Service, as the Swelling in thoſe Parts is occaſion'd by a Sort of Sympathy, and proceeds from the ſame Cauſe that brings on the Glanders, and as they muſt therefore conſtantly help to feed the Diſtemper. But if they cannot be remov'd by emollient or ſuppurative Medicines, I ſhould think it might conduce very much to the Horſe's Safety to open them with a *Cauſtick*, it being much eaſier to heal an Ulcer in thoſe Parts than in the Noſe; neither can it be attended with ſuch bad Conſequences as when thoſe Kernels are extirpated, as is ſometimes practiſed; becauſe in the Operation ſome Part of them is generally left behind, from whence Nature ſupplies that Want by new, but imperfect ones, which are more liable to Swelling and Inflammation than the firſt; ſo that inſtead of giving Relief, it often makes the Diſtemper worſe.

But if thoſe Swellings continue with the other Symptoms, the Horſe ought to be rowel'd, unleſs you perceive him to waſte, and in that Caſe any Kind of Iſſue will only help to ſhorten his Days.

And here, as concerning *Rowelling*, that will be of greateſt Service when made on the Inſide of the Thigh, in order to make a Revulſion; and this Method of *Rowelling* is ſupported by the ſame Reaſons as Blooding in the hind Parts for Diſeaſes of the Head; for as we find the Blood to move in a more than ordinary Quantity towards the Head of a Horſe that is glander'd, therefore a Vent to the Homours backwards, at ſo great a Diſtance, will, no doubt, be of Service, for by that Means the Blood will be brought to flow more towards the hind Parts than before ſuch an Iſſue was made, and a Check will be thereby put to the Diſtemper.

Injections to be us'd.

But when the Parts from whence the glander'd Running proceeds are become ulcerated, which may be known by the Clammineſs and Viſcidity of the Matter, and by its ſticking to the Inſide of the Noſtrils like Paſte; in this Caſe Injections muſt be made uſe of, and ſuch as are of the greateſt Efficacy; and for that Purpoſe the Farrier ought to provide a Syringe, with a Pipe that is of a convenient Length. But firſt of all it will be neceſſary to purge and cleanſe the Horſe's Noſe, by burning Brimſtone or *Auripigmentum* under it, which may be ſent up the Noſtrils through the ſmall End of a Funnel, and when he has ſneez'd and thrown out a plentiful deal of Matter, ſyringe his Noſe with Brandy or Red-wine,

and

and then inject the blue Water prescrib'd in the 24*th* Chapter, to take off Films and Webs from the Eye, for nothing will conduce more to the cleansing and healing the ulcerated Parts. The Water made of the *Lapis Mirabilis*, in the 23*d* Chapter, will also conduce very much to the same Intention; or the following, which is also exceeding proper where there is a great Foulness.

" Take a Pint of White-wine, one Quart of Plantain-
" water, two Handfuls of Red-rose Leaves, half a Dram
" of Orpiment, one Dram of Verdegrease, Myrrh, and
" Aloes, of each a Dram and a half."

The Rose Leaves are to be infus'd in the White-wine for the Space of forty eight Hours, and then the Wine to be pour'd off and mix'd with the Plaintain-water, and the Orpiment, Verdegrease, Myrrh, and Aloes, are to be beat to a fine Powder before they are mix'd with the Infusion.

A small Quantity of the *Unguentum Egyptiacum*, dissolv'd before the Fire in a little Oil or Turpentine, may be also injected thro' a pretty large Pipe, which will also be very assistful in cleansing the ulcerated Parts.

If your Horse begins to waste, and turns flabby, and subject to hectick Disorders, the Method laid down for such Cases is also to be follow'd; and if the Matter proceeding from the Nose denotes the Bones to be also ulcerated, by its Colour and rank Smell, you may then very justly begin to give over Hopes of his doing well, tho' I know there are several Farriers who have Assurance enough to boast of curing Horses in this Condition: However, his Nose ought to be syring'd with Brandy, or Spirit of Wine, and with those Things above-recommended, that he may become as little noisome and offensive as possible.

Forcing Matter from the Nose with too much violence not very commendable.

A Tincture drawn from *Euphorbium* is extremely serviceable in all Cases where the Bones are foul and ulcerated; but yet we cannot recommend its Use in Injections; because when it is given that way, it must waste the Parts that are sound as well as those that are putrify'd; and as it must be frequently used before it can produce the desir'd Effects, it may, no doubt, in so sensible a Part as the Nose, by its excessive stimulating Quality, derive a much greater Influx into the Parts, and, consequently, be the Cause of a greater Foulness; and for the same Reason, the cleansing the

Nose

Noſe by Fumigation, with Brimſtone and the like Combuſtibles, is not to be too often attempted; becauſe any ſuch violent Agitation will be apt to have the like Effect. I ſhould, therefore, in moſt Caſes of this Nature, recommend moderate Exerciſe, while the Horſe has Strength, or the Uſe of Chewing-Balls of *Aſſa Fœtida*, and other fæculent ſtinking Ingredients; for theſe will, for the moſt Part, purge the Noſe as much as is neceſſary; nor can ſuch a Method eaſily be attended with any ill Conſequence.

Of the Glanders which comes by Infection.

But it may, no doubt, be expected while I am upon this Cure, that I ſhould make ſome Diſtinction between that kind of Glanders which comes by Infection, and that which proceeds only from the common and uſual Cauſes; but as this cannot differ from that otherwiſe than in ſuch Circumſtances as may happen in different Conſtitutions, the Method of Cure, as to Generals, muſt therefore be the ſame. But when the Glanders becomes like a Plague among Horſes, as it ſometimes happens, it is then only to be conſider'd as a Symptom and a critical Diſcharge, which contributes to the Solution of ſome reigning Diſtemper. And in this Caſe, all thoſe Things that we have recommended for the Cure of malignant or peſtilential Fevers are proper, and ought to be made Uſe of internally.

We ſhall conclude with the general Precaution given by all Farriers, and that is, to ſeparate the Sound from the Unſound, though I believe this formidable Name of Infectiouſneſs has been chiefly owing to the laſt mentioned Kind of Glanders, which is Epidemical; for I have known glander'd Horſes ſtand ſome Months with thoſe that have been ſound, without any ill Effect; yet I muſt needs ſay, it would be Pity to run any ſuch Hazard with a good Horſe, when it may be ſo eaſily avoided.

CHAP. XXIX.

Of the Strangles.

The Strangles, ally'd to an external Quinſy.

THE Strangles is a Swelling under the Throat between the two Jaw-bones, and ſeems not to differ very much from that which in a human Body is call'd the *Squinaſy*, or *Quinſy*;

ſy; its Seat is not ſo much upon the Glands as on the Muſcles, and therefore it comes the more readily to an Impoſthumation; neither is there ſo much danger in Horſes as in human Bodies, becauſe in a true Quinſy the Muſcles of the *Larynx*, or Throttle, are for the moſt Part affected: whereas in the Strangles, the Muſcles of the Tongue ſeem only to be touch'd, and therefore the Diſeaſe comes naturally to have an external or outward Diſcharge.

Compared to the Small-pox by Solleyſell.

Young Horſes are moſt liable to this Diſtemper, and for that Reaſon the Sieur *de Solleyſell* compares it to the Small-pox, and has obſerv'd, that few Horſes are troubled with it above once, unleſs the Matter of the Strangles has been imperfectly caſt off, and then he ſays it generally returns when they are about the Age of ſix, ten, or twelve; he farther takes Notice, that the Matter ſometimes caſts itſelf off from the Limbs, and other Parts of the Body, eſpecially from thoſe Members that have been any ways hurt or weaken'd.

It has been a Loſs to that Author, who was ſo diligent an Obſerver of all manner of Accidents incident to Horſes, that he was not better acquainted with their inward Structure and Make, otherwiſe his Notices might have turn'd much more to his and the Reader's Account; for although this Diſtemper be near ally'd to an external Quinſy, as to its Situation, and alſo in many other Reſpects; yet no doubt, as it moſtly happens to young Horſes, it may therefore, in its Effects, alſo bearan Affinity to the Small-pox.

For as the Blood of young Horſes may reaſonably enough be ſuppos'd unequally fluid, having not as yet been ſufficiently comminuted by frequent Circulations; therefore, while they are in this imperfect State, they are render'd liable to Diſeaſes, as we have already taken Notice in another Place; and when theſe happen, they fuſe and melt the Blood, or purify it from its Viſcidities and groſſer Parts, by ſome Diſcharges, which are anſwerable to the Small-pox in human Bodies. But as the Small-pox breaks out in little Puſtules all over the Skin, wherever the Veſſels are the ſmalleſt, and where the Blood muſt of Conſequence be moſt apt to ſtagnate; yet becauſe the Blood-veſſels in Horſes are conſiderably thicker and ſtronger than in human Bodies, therefore theſe Impurities cannot ſo readily be diſcharg'd in that Manner, but fall out into Biles and Swellings

in

in all thoſe Parts that are the weakeſt, or the moſt dependent; and this may, no doubt, be the Reaſon why Horſes are more ſubject to the Strangles, and other Impoſtumations, while they are Colts, than when they are grown up to a more mature State.

But tho' this may be the true Reaſon of that Diſeaſe, and therefore that it may require ſome different, or, at leaſt, ſome acceſſary Helps, which are not altogether needful in common Biles and Inflammations, yet the Cure muſt be much the ſame as to Univerſals.

The Cure. And therefore, if the Swelling has a Tendency forwards between the Jaws (as is moſt common to Horſes, proceeding from the dependent Situation of their Head) ſo that the Paſſages of the Throat are not in danger of being choak'd up by it, the ſafeſt Way is to ripen it, and bring it to Suppuration, and for that End the moſt ſimple eaſy Methods may be firſt put in Practice, as anointing the Parts with Ointment of Marſh-mallows, and covering them up warm; for Nature oftentimes gives the greateſt Aſſiſtance in ſuch Diſeaſes. Or you may take Oil of Bays and freſh Butter, of each a like Quantity, Ointment of Marſh-mallows the Weight of both; or the Poultice in the preceeding Chapter may be apply'd warm twice a Day.

After the Swellings are ripe, and that you perceive Matter within them, but that they don't break, which perhaps may be hinder'd by the thickneſs of the Skin, you may open them with a Lancet; but if they do not ripen as you could wiſh, you had better made Uſe of a hot Iron, and ſear the Outſide pretty deep; but whether you open them by Inciſion, or by the Application of the Iron, you muſt be ſure to make your Operation in the lowermoſt dependent Part, for by that means the Matter will the more eaſily run off; whereas if you open them in the upper Part, if they happen to be large, you will have them conſtantly fill'd with Corruption; and alſo while you obſerve this Method, your Inciſion need be but ſmall, for the Matter will find itſelf a Paſſage through a very ſmall Orifice, when that happens to be rightly diſpoſed.

As ſoon as the Matter has fully diſcharg'd itſelf, you may preſs out what remains gently with your Thumb, and then make a Doſſil of fine Flax, and when you have dipt it in warm Baſilicon, which is the propereſt Digeſtive in all ſuch Intentions, you may introduce it into the Orifice, but not

too

too far, neither muſt that be continued above three or four Days in any common Caſe; for the keeping the Orifice too long open, will derive too great a Quantity of Matter upon the Parts, and will cauſe them alſo to ulcerate, and ſometimes to turn fiſtulous. And for the ſame Reaſon the Uſe of Tents muſt be very prejudicial, as they moſt commonly have that Effect.

And therefore when the Running begins to leſſen, you need only apply ſmooth flat Pledgits of Lint, arm'd with the ſame Ointment, over the Orifices, and above them a thick Compreſs of ſoft Canvaſs, in ſeveral Doubles, to fill up all the vacant Space between the Jaws, that the divided Parts may again be united; and if you find little hard Lumps remain after the Sores are healed up, you need not be much ſurpriſed, neither will they be of any ill Conſequence, for theſe may be remov'd by a defenſive Plaiſter, for which Purpoſe we recommend the following, which is eaſy to be made, and is very good.

" Take common *Diachylon* and Red-Lead Plaiſter, of " each four Ounces, common Pitch two Ounces, diſſolve " them in a Gallipot, or Iron Ladle, over the Embers, with " a ſufficient Quantity of Oil or Hog's-lard; then take Bole " in fine Powder an Ounce and a half, and ſtir it into the " Mixture, and make it to the Conſiſtency of a Plaiſter; " if it be too hard, you may diſſolve it again with a little " more Oil; and if it ſhould chance to be too ſoft, you " may add a little more of the *Diachylon*.

This muſt be ſpread on Leather, or a Piece of thick Dowlas; and after the Hair has been clipp'd off very cloſe, it may be notch'd and applied all under his Chaps, where it is to lie as long as it will ſtick on; and by the Help of this, all the little Hardneſſes will be diſſolved.

The *Baſilicon* which we have recommended for dreſſing the Sores, may be had ready made at any *Apothecary*'s; but it will be the more appropriated to Horſes, if half an Ounce of Turpentine be mixed with every Ounce of it; or the Farrier may make it himſelf in the following Manner.

" Take yellow Wax, Roſin, and common Pitch, of " each half a Pound, Oil or Hog's-lard nine Ounces, com- " mon Turpentine one Pound; melt them together over a " gentle Fire, conſtantly ſtirring, or elſe the Pitch will be " apt to burn; then ſtrain it through a coarſe Canvas, and " keep it for Uſe.

But

But if this Ointment ſhould incarnate, or make the Fleſh grow too faſt, you may mix with it a little of the Powder of Verdegreaſe made very fine, or the Powder of Red Precipitate, which will keep that under; but further Directions ſhall be given herein when we come to treat of Ulcers; we ſhall therefore go on to obſerve what is neceſſary to be done internally.

If you find your Horſe hearty and well, notwithſtanding thoſe Tumours, there will be no great Need for any thing but to give him Plenty of warm Water mixed with Oatmeal to drink, keeping him, in every other Reſpect, to his uſual Diet; but if you obſerve him to be feveriſh, and to forſake his Meat, it is a Sign Nature is over-much oppreſs'd, and requires ſome Aſſiſtance; and therefore to relieve that Oppreſſion, you may give him once or twice, or oftner, as you ſhall ſee Occaſion, a few Broth by Way of Clyſter, or a Decoction made with two or three handfuls of Marſh-mallows mixed with a Quarter of a Pound of common Treacle or *Moloſſus.*

And if you obſerve the Swellings to continue hard, but have little or no Tendency to a Suppuration, thoſe Things which have already been recommended for the Cure of putrid and malignant Fevers, may in that Caſe be given with Succeſs; or if thoſe things are not in a Readineſs, you may give him the following Cordial Drench.

" Take Gentian-root and Galangal in fine Powder, of " each half an Ounce, Cloves and Cinnamon, of each one " Dram, Saffron one Scruple, Powder of burnt Harts-horn " two Drams; let this be given in a Mixture of Milk-wa- " ter and White-wine, or in a Pint of Ale. After which " give him moderate Exerciſe for half an Hour; and when " you bring him into the Stable, let him be tied up another " half Hour, and then you may permit him to eat freſh " Hay.

An Ounce of *Venice*-Treacle diſſolv'd in a little Milk-water, or warm Ale, and given once or twice a Day, will be of great Service to aſſiſt languid Nature, and will either help to bring thoſe Swellings to Maturity, or will diſpoſe them to perſpire and go off in a kindly Manner.

Sometimes the Strangles are caſt off chiefly by the Noſe, and ſometimes they break inwardly about the Roots of the Tongue, and when that happens, moſt of the Matter iſſues from the Noſe alſo. In either of theſe Caſes the Horſe ſhould be moderately rid, for that will help

help him more effectually than any Thing elſe to expel the Matter, and will not be attended will ſuch ill Conſequences as Fumigation, and the injecting of hot Things, or the putting of Feathers up the Noſe; for by this Means you do not aſſiſt Nature, but conſtrain her, which is no ways agreeable to ſound Practice. But if the Swellings break inwardly, it will be very proper to waſh his Mouth ſometimes with Red-wine mixed with Honey of Roſes, for that will keep it clean, and prevent Ulcers; but if the Sores be like to continue, which can only happen when the Horſe is in a bad State of Health, you may diſſolve a Quarter of an Ounce of crude *Sal Armoniack* in a Pint of Water, and waſh his Mouth with it once or twice a Day.

If the Diſcharge be plentiful, and the Matter well digeſted, there will be but little Occaſion for After-helps, as Blooding and Purging: But if any Accident happens, either from the State of the Body, or from bad Management, that the Cure ſeems imperfect, and the Horſe does not thrive upon it, then Recourſe may be had to Purging: For which Purpoſe I chiefly recommend the Preparations of Aloes, becauſe theſe are the more effectual to work upon the Blood, and to break it of its Viſcidities. And after Purging has been three or four times complied with, one of the following Balls may be given every Day, and continued for ſome Time.

"Take Gentian, Zedoary, and Galangal, of each four "Ounces; Cloves, Nutmegs, and Cinnamon, of each half "an Ounce; Myrrh ſix Ounces, calcin'd Harts-horn half "a Pound." Let all theſe be made into a fine Powder, and incorporated together with Gum Arabick diſſolved in Water, and made into Balls weighing two Ounces each.

But if your Horſe be of ſmall Value, the following may be given, which perhaps will anſwer the End, and be little inferior to the other.

"Take the Powders of Gentian and Galangal, of each "ſix Ounces, Antimony finely prepar'd eight Ounces, Law-"rel-berries, Coriander and Caraway-ſeeds in Powder, of "each an Ounce, the Powder of calcin'd Harts-horn ten "Ounces. Let theſe be made into Balls weighing two "Ounces, as the former; one of which may be given "every Day for the Space of a whole Month, and they "will contribute very much to rectify your Horſe's Con-

" ſtitution, and to cleanſe his Blood from all Impurities."

I have inſiſted the longer on this Subject, as the Method here laid down is not only to be obſerved where there has been an imperfect Diſcharge of the Strangles, but alſo in all other Impoſthumations and inflam'd Swellings, where the Endeavours of Nature ſeem to have been inſufficient; and to this we ſhall conſtantly refer in all ſuch Caſes.

CHAP. XXX.

Of the falſe or baſtard Strangles.

A Miſtake of Solleyſell.

THE laſt mention'd Author accounts for this Diſtemper after a very ſtrange Manner, and in a Way that is directly contrary to Nature. He ſays, When the Strangles have not been thoroughly diſcharged at the uſual Time, a latent Ferment will remain in the Body, which, in its proper Time, will agitate the Humours, and cauſe them to fall into the ſame Place where they ſhould have been caſt off at firſt. And this, he ſays, will ſometimes happen five or ten Years after, when a Horſe is ten or fifteen Years old. But beſides, that there is no ſuch Ferment in the Body of any Animal, there is no ſuch Regularity in Nature; and that may be plainly proved by his own Obſervation, where he takes Notice of the Matter of the Strangles falling off ſometimes upon other Parts of the Body that have been previouſly weakened; and this is truly the Way of Nature. And therefore when Swellings happen to old Horſes about the Jaws, and among the Kernels, it is an infallible Sign of a crazy Conſtitution in them, and is oftentimes the Fore-runner of the Glanders, unleſs that has been occaſioned by ſome Violence. And we may even obſerve in human Bodies, in all tender and delicate Habits, the ſame Diſpoſition to Swellings in the glandulous and kernelly Parts, but eſpecially in thoſe that are conſumptive; and as in human Bodies the Humours have chiefly a Tendency towards the Groins, *&c.* in a Horſe they move towards the Head and Jaws, forming Swellings in thoſe Parts, as they are dependent in a Horſe, acc rding to our repeated Obſervations.

Therefore in ſuch Caſes, inſtead of being too buſy to ripen and draw away ſuch Kernels, unleſs they be inflam'd, and have a Tendency to Suppuration, the Horſe ought to

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have Plenty of good Feeding, with the Help of ſome Reſtoratives, and a continued Courſe of the Cinnabar Pills, as directed in the Farcin, to attenuate and open thoſe hard Obſtructions; and theſe will be the moſt likely Means to recover him.

And this Method ought chiefly to be followed in all imperfect Strangles, whether a Horſe be young or old; only that to young Horſes, Reſtoratives will not be neceſſary, unleſs he be alſo conſumptive. But the Reader may conſult the preceding Chapter.

CHAP. XXXI.

Of the Vives.

The Vives, a Swelling of the Parotid *Glands.*

THE *Vives* has a very near Affinity to the Strangles, and ſeems chiefly to differ in this, that as the Strangles for the moſt Part happens to young Horſes and Colts, while they are at Graſs, and while they feed with their Heads downwards, the Swelling and Inflammation has therefore the greater Tendency forwards between the Jaws; but the Vives will happen to a Horſe at any Time, and is more particularly ſeated in the Glands or Kernels under the Ears. When the Diſeaſe is violent, all the Parts about the Throat will be inflam'd, and the Paſſages of the Wind-pipe and Gullet ſo much preſs'd upon, that a Horſe in this Condition being unable to ſwallow, of Neceſſity leaves his Food; and that does not proceed from the Imperfection in thoſe Parts alone, but alſo from the Violence of the Pain, which affects the Nerves to ſuch a Degree, that all other Senſations are as it were loſt in that.

The Cauſe.

The Cauſe is chiefly from Cold, and from all thoſe things that induce and bring on a Cold; as riding in the Night-Fogs, when a Horſe has not been uſed to it; drinking cold Water while he is warm, or ſuffering a Horſe to cool too ſoon after hard Riding, *&c.*

The Signs are apparent in the outward Swellings, which when the Inflammation is violent, are accompanied with Reſtleſſneſs, and ſometimes with a Fever; ſometimes he lies down, but immediately ſtarts up again, being uneaſy in every Poſture. Sometimes the Pain is leſs violent, and then he not only lies down quietly, but will alſo feed.

The Cure. As to the Cure, it is neceſſary to conſider, that altho' the true Method of carrying off inflam'd Swellings, is by ſuffering them to come to Maturity and Ripeneſs; yet when theſe happen upon any Part that may endanger Life, then Nature ought to be ſomewhat reſtrain'd, as we have obſerved in the Beginning of this Treatiſe. And therefore when you obſerve him under violent Pain, you may freely venture to take away ſome Blood from his hind Parts, to make a gentle Revulſion.

After Blooding, becauſe Horſes are for the moſt Part coſtive in all ſuch Affections, he may be kept moderately open with ſuch Clyſters as have been directed for the Strangles; and theſe may be repeated once or twice a Day, while the Horſe is in violent Pain.

And becauſe in all ſuch Caſes it is proper to keep the Secretions at Liberty, he ought to have Plenty of warm Water ſweeten'd with Liquorice, and ſharpen'd with *Sal Prunellæ*, or purify'd Nitre, or Salt-petre; or the following.

" Take two Ounces of White-wine Tartar, beat it to a " Powder, and diſſolve it in a Quart of warm Water, and " diſſolve in the ſame Liquor half an Ounce of crude *Sal* " *Armoniack*, and pour it into his Water, which ought " alſo to have a handful of Oatmeal boiled in it.

The frequent Uſe of thoſe things will promote the Diſcharges by Urine and inſenſible Tranſpiration, ſo that the Swellings will ſooner ripen, not only as there muſt by this Means be a leſſer Derivation towards them, but alſo as the Matter will become more attenuated, and fitter for a ſpeedy Suppuration.

Venice Treacle, or *London Treacle*, with the other Medicines above preſcrib'd for the Strangles, may alſo be given, obſerving the ſame Precautions, not only as to Internals, but likewiſe in Externals; for ſoftening Poultices are abſolutely neceſſary, but thoſe of Yeſt, and Meals made of common Grain, are apt to draw too violently, and therefore to be rejected, eſpecially while there is already an over-great Inflammation. But thoſe which are the beſt fitted for the Swellings of the Kernels about the Head and Neck, or ſuch as are frequently made of the Pulps of emollient Herbs, as Mallows, Marſh-mallows, Agrimony, Mercury, and the like; the Flowers of Violets, Melilot, and Elder, and the Roots of white Lillies, the fat and unctuous Seeds, as Linſeed, Cummin-ſeeds, and Fenugreek;

greek; and these should also be quicken'd with a Mixture of penetrating Oils or Ointments, as those of Marsh-mallows, Earth-worms; or with some spirituous Mixture, as the rectify'd Spirits of Wine, or Brandy, or a small Quantity of Camphire in fine Powder, stirr'd into the whole Composition over warm Ashes, or before the Fire; for by this Means a moderate Perspiration will be still maintained in the diseased Part, which might otherwise be over much obstructed by the Relaxation that might follow a continual Application of emollient softening Things.

And it will be here necessary, as well as in the Strangles, after the Swellings are opened, to apply little Bolsters in all the hollow Parts between the Jaws and under the Ears, that if there should chance to be a more than ordinary Quantity of Matter continually falling into the Hollowness, it may not have Room to make any other Lodgment for itself but what is proper.

Sometimes those Kernels continue hard and swell'd without Inflammation, and sometimes adventitious or Bastard Kernels grow out into those Parts, and are of little or no Use, but rather to be accounted Excrescences; these may be extirpated and cut off, taking Care to avoid hurting the Branches of the *Jugular* Artery; and if there chance to be an Effusion of Blood from the smaller Branches, which are often inlarged after continued Swellings in those Parts, that may be stopp'd by searing with an Iron moderately heated, according to the Directions hereafter laid down for Cauterizing and giving the Fire.

But if these Kernels continue hard and swell'd without Inflammation, and have an Appearance as if they might be resolv'd, it is then much the best Way to use such Applications as are proper to discuss them; because Swellings and Inflammation in the glandulous kernelly Parts are troublesome, whether the Issue be good or bad.

Therefore the same Plaister that was already directed to remove the remaining Hardness of the Strangles, may be applied all over the Kernels, and the same Method us'd internally to promote the Passage of the Blood through their compact Substance: But the Reader may receive further Satisfaction on this Head, by consulting that Part where we have made some Observations concerning Tumours.

CHAP. XXXII.

Of the Anticor.

The Anticor, *an Inflammation of the Gullet.*

MOST Authors have been miſtaken as to the Nature of this Diſeaſe; the greateſt Number attribute it to the Heart; and *Solleyſell* calls it a Swelling of the *Pericardium*, or Purſe of the Heart. But they are all plainly in an Error; for an *Anticor* is an Inflammation in the Gullet and Throat, and is the very ſame which in Man is called *Angina.*

The Cauſe. It proceeds from the ſame Cauſes that bring on infinite Diſeaſes on Horſes, to wit, hard Riding, expoſing a Horſe to the Cold, and giving him cold Water to drink when he is hot, full Feeding, and whatever elſe may cauſe a ſudden Stagnation of the Blood.

The Signs. The Signs are, firſt, all thoſe that accompany a Fever; for an *Anticor*, while it is internal, never wants a Fever to attend it; but when it ſhews itſelf externally, the Fever begins to abate, unleſs it continue to be both external and internal.

So long as the Inflammation continues in the Gullet, the Horſe forſakes his Food; and tho' he has frequent Inclinations to drink, and albeit his Water be made moderately warm, the firſt Gulp deters him from meddling with it again, until he has forgot the Pain and Agony it put him into. And the Pain of the Gullet is yet more manifeſt from this (and I believe every Farrier muſt have made the ſame Obſervation) that whenever a Drench is given him he ſtaggers, and ſeems as if he would fall down, and makes ſeveral ſhort interrupted Groans, or rather Gruntings, and ſometimes will break out into a cold damp Sweat about his Ears.

The Cure. The Cure muſt be begun by Bleeding, and that needs not be very ſparing; for this Diſeaſe ſeldom happens to Horſes that are poor and low. And here we alſo approve of ſtriking one or other of the Veins on the hind Parts, to make a Revulſion.

After Blooding, the following Clyſter may be given.

" Take two handfuls of Barley, two Ounces of *Sal poly-*
" *chreſt* reduc'd to fine Powder, boil them in two Quarts of
" Water for the ſpace of a quarter of an Hour, add to the
" Decoction a Pint of Urine, a quarter of a Pound of freſh
" Butter, and two Ounces of Oil of Rue. Let this be given
" Blood-warm, and repeated twice a Day, or oftner.

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If he takes to Food, nothing muſt be given him but moiſten'd Hay, and ſcalded Bran; and what elſe, muſt be chiefly ſuch things as are proper to keep down Heat and Inflammation, and abate the feveriſh Symptoms, for which Purpoſe we recommend, after Blooding, thoſe Remedies that are proper to promote Sweat. Therefore let the following Drench be prepar'd for him.

" Take Treacle-water and Carduus-water, of each one " Pint, diſſolve in theſe two Ounces of old *Venice*-Treacle, " and after this has been exhibited, cloathe him well, and " give him a little warm Water to drink; inſtead of the " *Treacle* and Carduus-water, a Pint of ſtale Beer, mixed " with ſmall Beer, may be us'd." Nothing is ſo effectual to remove Inflammations, eſpecially after Blooding, as Sweating; and therefore if you find it difficult to promote Sweat, you may give him the following Ball.

" Take of old *Venice*-Treacle two Ounces; volatile Salt " of Harts-horn fifteen Grains, *Matthew*'s Pill one Dram, " Camphire in Powder ſix Grains, Powder of Liquorice, " or Saſſafras in Powder, what is ſufficient to make it into " a Paſte; let this be exhibited after the Operation of the " Clyſter is over.

And if the Symptoms begin to abate, you may venture to give your Horſe a gentle Purge, for which Purpoſe the *Pulvis Cornachini*, commonly called the Counteſs of *Warwick*'s Powder, takes place beyond all others, and is thus made.

" Take Scammony prepar'd with the Fumes of Brim- " ſtone four Ounces, Diaphoretick Antimony two Ounces, " and the ſame Quantity of the Cryſtals, or Cream of Tar- " tar; make them into a fine Powder.

The Doſe is two Ounces, made up into a Ball with Butter and Flour, to be given with the uſual Precautions.

This Medicine not only purges the Belly moderately, but alſo keeps the Pores open, and carries off a great deal by Sweat and inſenſible Tranſpiration.

If the Swelling appears outwards, and at the ſame time the other Symptoms abate, you may then leave off Purging, for what is intended by that Evacuation, is chiefly to diſperſe the inward Diſorder; and then you are only to apply ripening Cataplaſms and Poultices, allowing him at the ſame Time *Sal Prunellæ*, Salt-petre, or the *Sal Polychreſtum* diſſolv'd in his Water.

The Cataplaſm for this Purpoſe may be made of the following Ingredients.

" Take Linſeed and Fenugreek-ſeeds, of each two Ounces, Camomile, Melilot, or their Flowers, of each four handfuls; boil them over the Fire till moſt of the Moiſture be evaporated, then paſs them thro' a Sieve, and add a Quantity of Cow's Dung equal to the other Ingredients, with a ſufficient Quantity of Ox or Sheep's Suet to keep it moiſt." Let this be applied twice a Day pretty warm.

Or inſtead of this compounded Poultice, Cow's Dung alone apply'd warm to the Part, with a ſufficient Quantity of Suet or Ointment of Marſh-mallows, may be ſufficient to bring the Swelling to Maturity.

When it grows ſoft, and the Matter ſeems ready for a Diſcharge, it may be open'd in the dependent lowermoſt Part, by the Application of a hot Iron, keeping a Doſſil in the Mouth of the Wound until the Running abates, and likewiſe applying Compreſſes and convenient Bandage to keep the elevated Skin cloſe to the ſubjacent Fleſh, that it may be the ſooner united; but if the Cavity of the Impoſthumation be large, it will not be amiſs to lay it open with a hot Knife an Inch or more; or if you would chuſe to avoid the Scar, with a cold ſharp Inſtrument, or with a Pair of Sciſſars.

The Cure may be finiſh'd with applying only the *Unguentum Baſilicum*, or a Digeſtive made with Turpentine, the Yolks of Eggs, or Honey, with a moderate Mixture of Brandy, or Spirit of Wine; and if any Foulneſs appears, or if it heal too faſt, or ſpongy ſoft Fleſh ariſe, Pledgits dipt in Copperas-water, or a Solution of blue Vitriol may be apply'd, which will keep it ſmooth and even.

But if the Swelling increaſe very faſt, which oftentimes happens, and that there is no Tendency to Digeſtion, but that it ariſes towards the Neck, affecting all the Muſcles in thoſe Parts, the Horſe will then be in Danger of Suffocation, and unleſs ſpeedy Relief be given, he muſt ſoon be ſtrangled.

Therefore, beſides repeated Blooding, if he is not too much wore out, it will be convenient to take a hot Searing-Iron, and apply it to five or ſix Places on the lower Part of the Swelling, cauterizing thoſe Parts, that they may be ſpeedily brought to Matter, which may alſo be dreſs'd with Flax or fine Hurds dipt in Tar and Turpentine, mix'd before the Fire, and apply'd warm; for by giving Pain in thoſe dependent and inferior Parts, you cauſe the Humours to flow downwards from the Swelling, and by making Vents that are ſufficient to diſcharge them, you anticipate the Pain,

and

and take off from its Violence, which is alſo an Extreme to be avoided; neither need you be afraid of the Swelling that may caſually happen in the Fore-legs; and, perhaps, even his Limbs, by Cauterizing, for that cannot be of ſuch ill Conſequence, as when it is upon the Neck and Throat, neither will it be of any Continuance, if due Care be taken of the Iſſues.

The Sieur *de Solleyſell* recommends the making of ſmall Inciſions with a Fleam or Lancet, in eight or ten Places on the Swelling, and to thruſt into the Holes between the Skin and the Fleſh, Pieces of the Root of black Hellebore of the Bigneſs of the Tag of a Point, and if the Tumour be very large, he recommends the uſe of white Hellebore, at the ſame time chafing the Part with the Ointments of *Agrippa* and Marſh-mallows. The Roots, by their hot burning Quality, draw down and increaſe the Swelling, and the Ointments are to ripen the incloſed Matter, and fit it for a Diſcharge.

The ſame Author alſo recommends the Uſe of *Retories*, or *Ruptories*, for drawing an immediate Flux of Moiſture from the diſeaſed Part. Theſe are Ointments of the ſame Nature with thoſe which are made to draw Bliſters on the human Body, and are compoſed of the like Materials; and becauſe they may be uſed with much Safety, we ſhall inſert two or three that are eaſily made, and will be found of no leſs Efficacy than thoſe that are more compounded.

"Take of Baſilicon four Ounces, black Pepper and "Ginger of each half an Ounce, *Spaniſh* Flies two Drams. "Let the Flies, Pepper, and Ginger, be made into a fine "Powder, and incorporated with the Baſilicon." The following is yet more powerful.

"Take a quarter of a Pound of Baſilicon, one Ounce of "red Precipitate in Powder, half an Ounce of Euphor-"bium, and two Drams of the Flies." Or the following, which is yet more efficacious than either of the former.

"Take Oil of Bays four Ounces, Euphorbium in Powder "two Ounces, *Cantharides*, or *Spaniſh Flies*, half an Ounce.

Theſe may yet be made ſtronger or weaker, according to the Uſe they are put to. The Way they are apply'd, is by ſpreading them by little at a Time upon the Part affected, holding a hot Bar of Iron to make them ſink in; and this Operation may be repeated as often as the Caſe requires, but eſpecially until they have drawn out a plentiful deal of reddiſh Water; but they muſt be ſparingly us'd on ſome Parts, as we ſhall more particularly obſerve hereafter.

CHAP.

CHAP. XXXIII.

Of the Diſeaſes of the Stomach; and firſt of the Loſs of Appetite, and of a deprav'd Appetite.

AS the Food of Horſes conſiſts of the moſt ſimple Productions of the Earth, they cannot be liable to many Diſeaſes in their Stomach; and therefore when we obſerve a Horſe loſe his Appetite, we may very readily ſuſpect that Diſorder to be a Symptom of ſome other Diſeaſe, or to be the Effect of ſome ſudden Accident or Miſmanagement. For it is very certain, whatever cauſes the Blood to flow in an over-great Quantity into the Stomach, muſt be the Occaſion of a Plenitude and Fulneſs of the Veſſels, which, according to its Degree, will leſſen the Appetite and Inability of Digeſtion; and if it amounts to an Inflammation, or if thoſe Veſſels be very much diſtended, it muſt needs cauſe not only a Want of Appetite, but a Loathing alſo.

The Want of Appetite diſtinguiſh'd from that which accompanies a Fever or other Sickneſs.

And thus we obſerve in all Fevers and violent Colds, a Horſe forſakes his Food; and ſometimes we may take Notice in him the ſame Diſlike to eating after immoderate Exerciſe, or after drinking cold Water when he has been heated; or after a long and tedious Day's Riding in hot Weather; and, in fine, after all thoſe Errors that may be the Cauſe of Fevers, and moſt other Sickneſſes. And becauſe ſuch Diſorders very often go off without any other viſible Symptom than the Loſs of Appetite, they are therefore very often attributed wholly to the Stomach.

But the Diſeaſes of the Stomach, which, properly ſpeaking, produce the Want of Appetite, have not their immediate Dependence upon any other Diſeaſe, but proceed either from the Quantity or Quality of what is contained in it, and in this Caſe the Signs are different from the former; for in the one the Horſe wholly forſakes his Food, and in the other he is dainty, yet he eats, though it be but little, and is capable of doing proportionable Service.

The Cauſe.

And this Imperfection, for the moſt part, proceeds from a *Lentor* in the Bowels, and Coſtiveneſs, when a Horſe has ſtood ſome time in the Stable, has had full Feeding without proportionable Exerciſe; for by that Means the Stomach is not only too full, but the Juices turn corrupted by their Stagnation, and acquire ſome evil Qualities

that

that may take away the Appetite, or cauſe a Horſe's Appetite to be vitiated; and when the laſt happens to Horſes, we often obſerve them, by a Sort of Inſtinct, crave after thoſe things that are very different from their natural Food, as the eating of Mud, or Clay out of the Walls.

The Cure.

But in handling the Cure, we need ſay but very little concerning that Species of Want of Appetite, which is often the ſudden Effect of ſome ſudden Accident, or ill Management; for this is frequently cured by Blood-letting alone, as it is, for the moſt Part, no other than a Symptom of a beginning Fever, and of ſuch a one where the Blood, if at all, is but little vitiated.

Wherefore, in any ſuch Caſe, a Quart of Blood may be taken from the Neck-vein, after which may be adminiſtred ſuch things as are cooling, and fit to keep down a Fever.

His Diet ought to be ſcalded Bran, and his Water ſharpen'd, as has been directed in ſuch Caſes, and, with the Aſſiſtance of moderate Exerciſe his Stomach will ſoon come to him.

But when the want of Appetite proceeds either from a conſtant Fulneſs, whereby the Action of the Stomach is hinder'd, that its Sides cannot meet together ſo as to excite the Senſation of Hunger; or if it proceeds from an evil Quality in its Contents, as for Inſtance, if there be ſlimy Matter ingender'd in it, either from raw undigeſted Food, from the Want of a free Diſcharge of the Dung, or if any ſharp corroſive Matter be in it, cauſing a deprav'd Appetite, or a Senſation of Hunger by Fits, as we oftentimes obſerve, the moſt rational Method in all theſe Caſes, is in the firſt Place to evacuate and purge the Stomach, by ſuch things as are appropriated, either to ſweeten the Juices, or attenuate the viſcid Phlegm.

And this Method ſeems to be the moſt reaſonable with Reſpect to Horſes, becauſe, as we have elſewhere obſerv'd, they are no ways diſpoſed to vomit, or throw any thing out of the Stomach that has once enter'd into it, and that ſeems to be owing to the Figure of the Gullet, which is contracted more than in ſome other Creatures, and has a ſpiral Direction, a little above its Inſertion into the Stomach; for had it been otherwiſe, tho' a Horſe might have vomited as well as ſome other Animals, yet as he feeds much with his Head downwards, he would then perhaps have lain under the Inconveniency of having his Food fall ſometimes back again into the Gullet, which would be very troubleſom to him; and we may likewiſe obſerve from frequent Experiments, if there be never ſo large a Quantity of any vomiting Medicine given to a Horſe, it has

no

no Effect that Way, but either works by a Diſcharge of the Dung, or inſenſibly upon the Maſs of Blood as an Alterative.

And therefore purging Medicines are, no doubt, the moſt appropriated to give immediate Relief in all ſuch Foulneſſes of the Stomach as are of this Kind. But if a Horſe be coſtive, no Purging Phyſick ought to be given him but what is very moderate, unleſs the Bowels are firſt cleans'd by the Uſe of Clyſters; for if the Guts be very full of Dung, and if that be harden'd when purging Medicines are adminiſter'd by the Mouth, they ſometimes prove fatal to Horſes; for when the Phyſick cannot make its Way downwards, it flings a Horſe immediately into Convulſions, becauſe he wants that Benefit of Nature which Men and ſome other Animals have of throwing upwards. But we ſhall lay down the Method that is proper to be uſed in thoſe Diſorders.

And firſt, if the Horſe be coſtive, the following emollient Clyſter may be given, after he has been rak'd by ſome Boy, or one that has but a ſmall Hand.

" Take of the Root of Marſh-mallows ſliced half a " Pound, the Leaves of common Mallows three handfuls, " Linſeed and Fenugreek-ſeeds of each two Ounces; boil " them in three Quarts of Water for the Space of half an " Hour, ſtrain the Decoction thro' a coarſe Cloth while it " is hot, and diſſolve in it four Ounces of Honey, two " Ounces of common Treacle, and ſix Ounces of Oil or " Butter." Let this be injected lukewarm, holding his Tail cloſe to his Tuel as long as poſſible; and let it be repeated for two or three Days, or until the Horſe's Body is open enough, and that there is a Way made for Purging: after which he may have the following Drench given him.

" Take of the Roots of Gentian and Zedoary ſliced, of " each two handfuls, Hyſſop and Rue of each two hand- " fuls, the Leaves of *Sena* two Ounces, Aniſeeds or Fen- " nel-ſeeds bruis'd an Ounce; boil them in three Pints of " Water to the Conſumption of one Pint, diſſolve in the " Decoction two Ounces of Lenitive Electuary." To be given in the Morning, keeping him faſting two Hours before, and one Hour afterwards; then he may be rid or walk'd gently for an Hour more, and when his Phyſick begins to work, he may be permitted to drink warm Water ſtrew'd with Oatmeal. Or the following Purging Balls may be given.

" Take of the beſt Aloes an Ounce and a half, Diagri- " dium two Drams, Galangal in Powder half an Ounce, " Cloves half a Dram." Make them into Balls with Flour and Butter.

Theſe

Theſe Balls, or the preceeding Draught, may be given with Succeſs to recover loſt Appetite; and may for that Purpoſe be repeated as often as there is Occaſion, which needs be but ſeldom, unleſs a Horſe has been ſome conſiderable Time without a good Appetite, and in that Caſe he may be purged twice a Week, for a Fortnight or three Weeks ſucceſſively; and the Days he does not purge, the following Powder may be given him in a Decoction, wherein a handful or two of Rue has been boiled.

" Take Gentian in Powder two Drams, Galangal, Ze-
" doary, and *Calamus Aromaticus*, of each a Dram and a
" half, Cinnamon and Bay-berries of each a Dram." Let theſe be pounded together, and be given in the Decoction, or in a Pint of White-wine.

If the Horſe be of a delicate waſhy Conſtitution, and unable to bear much Purging, all that is neceſſary in that Intention may be anſwer'd by Clyſters, with the Uſe of ſcalded Bran now and then. The preceeding Powder ought alſo to be given every Day, or what our common Farriers oftentimes adminiſter to reſtore Appetite, *viz.* Garlick and Rue champ'd and pounded with Butter and Flower, may be very ſerviceable, eſpecially to ſtrong robuſt Horſes.

But above all Things, the Uſe of Chewing Balls, and conſtant Exerciſe, is abſolutely neceſſary, and with the Concurrence of a few of thoſe Helps above directed, will ſoon recover a Horſe to his Appetite.

If you obſerve your Horſe mangle his Hay, and continually nibling Mud and Dirt, you may then very reaſonably ſuppoſe his Stomach to be foul and out of Order; nor is it improbable that this Deſire after Earth and Mud proceeds from an Acidity and Sourneſs of the Juices; for thoſe Creatures, by a Sort of Inſtinct, very often, of their own Accord, take to ſuch things as are proper to relieve them of troubleſome and uneaſy Senſations: And this is very obſervable in Dogs and Cats, who are led by the ſame Inſtinct to ſwallow rough Blades of Graſs, in order to make themſelves vomit, when they find their Stomachs oppreſs'd. Theſe are Inſtances that are familiar, and known to every one; but Natural Hiſtory abounds with an infinite Number of the like Inſtances in other Creatures; ſo that we are not to doubt but an Animal of the greateſt Sagacity, as a Horſe certainly is, and as he is alſo as much expoſed to Diſeaſes, if not more, than any other Creature, muſt therefore, when at Liberty, oftentimes be led to his own proper

Reme-

Remedies. I could give ſome very odd Inſtances of this in Horſes from my own Obſervation; but I ſhall only here take Notice of what relates to the preſent Caſe.

They muſt needs have but little Acquaintance in Phyſick, who do not know that *Earths* have a Virtue in them, not only to dry up a Superfluity of Moiſture, but ſome of them to imbibe and take off the Acidity of ſour Liquors, and it is, no doubt, from ſuch a Depravity in the Stomach, that a Horſe leaves his ordinary Food to eat dry'd Earth or Mud, and this he is forced to do from the Craving of his Appetite, and is often compell'd to take up with the worſt, for Want of ſomething more efficacious.

When I attended the Army, I once took an Opportunity of gratifying a Horſe in a very ardent Deſire of this Kind, who had ſuffer'd very much from his Keeper, and had been often beat for eating Clay out of the Wall. I brought him a Piece of Chalk the Bigneſs of a Man's Fiſt, and laid it into the Manger, he turn'd it over with his Noſe ſeveral times, and at laſt broke off ſome of the Corners and eat them; whereupon I took up the Chalk to break it into ſmall Pieces, and becauſe he thought I was going to rob him of it again, he puſh'd his Head towards me with all the Eagerneſs imaginable, and when it was broke, he eat the greateſt Part of it, and fell immediately to his Hay. The Dragoon, who kept him, told me he gave him more Chalk afterwards, and obſerv'd he eat his Hay the better for it; for being commanded to march ſoon after, he was perfectly cur'd by the Exerciſe, and had no further Cravings of that Kind.

This Remedy is very eaſy, and may be had every where, or inſtead of it burnt Harts-horn in Powder, which is yet much better, may be given; but thoſe Remedies will be ſtill the more efficacious, if, previous to them, Purging be adminiſter'd, and afterwards conſtant Exerciſe be given, there being nothing which contributes ſo much to wear off thoſe Diſorders as Exerciſe, when it is moderate. But the Remedies preſcrib'd in the following Chapter, will alſo be uſeful in this Caſe.

CHAP. XXXIV.

Of the Hungry Evil.

The hungry Evil generally at firſt proceeds from Emptineſs.

THIS Diſtemper generally proceeds, at firſt, from bad Keeping, or exceſſive Purging: But there are ſome Horſes who ſeem

ſeem to be incurable, becauſe albeit they feed plentifully, their common and natural Diſcharges ſeem at the ſame time to be more than what is proportionable to their Feeding.

Moſt Horſes that have this Infirmity on them are but Jades, and therefore we ſhall ſpend but little Time about it; however, ſince there may be ſome very good Horſes that have a voracious Appetite after ſuch Caſes as we have mention'd, and may be recover'd, we ſhall lay down the propereſt Means that can be made uſe of for that Purpoſe.

The Cure.

And therefore ſince the *Hungry Evil* in them proceeds from Emptineſs, they ought beſides Plenty of Food, to have thoſe things adminiſter'd to them, that are proper to lubricate and ſoften the Fibres of the Stomach, and to leſſen that Senſation; for which Purpoſe the Leaves of Mallows, and Roots of Marſh-mallows ſhould be boiled in their Water with Liquorice, and their Corn ſhould be mixed with the fat mucilaginous Seeds, as Fenugreek and Linſeed, *&c.*

But if he cannot be eaſily brought to the Uſe of thoſe Things in the Way of Diet, they may be given him after the following Method:

" Take the Roots of Marſh-mallows two Pounds, Lin-
" ſeed and Fenugreek-ſeeds of each four Ounces; firſt
" pound the Seeds, and then the Roots, to a Maſh; and
" afterwards make them into Balls, with a Mucilage of
" Linſeed or Fenugreek, as big as a Pullet's Egg; one of
" which may be given in a Morning, one about Noon,
" and another in the Evening.

Markham's Balls may alſo be given in this Caſe, eſpecially if the Brimſtone be kept out of them; and in fine, all fat unctuous Medicines, for thoſe not only help to fatten a Horſe, but take off thoſe violent Senſations of Hunger that cauſe him to eat ſo voraciouſly, as is uſual in ſuch Diſorders.

CHAP. XXXV.

Of the Diſeaſes of the Guts; and firſt of the Cholick.

The Cholick not ſo properly a Diſeaſe as a Symptom that may attend all Indiſpoſitions of the Guts.

THE Cholick, Fret, or Gripes, which, in the Farriers Terms, tho' very injudiciouſly, is meant to ſignify moſt of the Diſeaſes of the Guts, is no other than the Pain that accompanies all the particular Diſorders thoſe Parts are liable to; and therefore when a Horſe is troubled

troubled with Cholick Pains, the Farrier ought diligently to enquire into the true Cauſes thereof; for as no Part is more ſenſible than the Guts, any thing retain'd too long in them, or any thing injected and thrown out in an over-great quantity, will, on ſome Occaſions, bring a Horſe into exquiſite Torment; we ſhall therefore take particular Notice of the different Cauſes of ſuch Diſorders, and ſuit the Method of Cure according to their ſeveral Exigencies.

CHAP. XXXVI.

Of the Dry Gripes and Adſtriction of the Bowels.

From whence Coſtiveneſs and dry Gripes proceed.

HOrſes are ſeldom or never troubled with any other Adſtriction in their Bowels, excepting what proceeds from the Dung hardening and obſtructing thoſe Paſſages; and therefore we ſhall have the leſs to ſay upon that Head, having ſpoken to it already, in that Chapter where we have treated concerning *Surfeits*, only we ſhall here add, that when the Matter is pent up in the firſt Paſſages, to wit, in the Stomach and Guts, and putrifies there, the Juices turn ſour, viſcid, and ropy, and fret the tender Membrane which covers the Inſide of the Guts; by the Viſcidity alſo the Wind is intangled, which creates a Swelling and Diſtention, ſo that the Belly becomes hard like a Drum; and if the Excrements be very much harden'd in the great or ſtreight Gut, they cauſe a Preſſure upon the Neck of the Bladder, and hinder the Paſſages of the Urine, that a Horſe cannot piſs; ſometimes the Fundament ſwells, and all towards the Sheath, which is very dangerous.

A Horſe in this Condition muſt needs be in great Pain, and even in Danger of his Life, if a ſpeedy Relief is not had; therefore, in order to the Cure, after he has been rak'd, and that with a great deal of Caution, the following Clyſter ought to be injected.

The Cure.

"Take the Leaves of Mallows, Marſh-
"mallows, and Mercury, of each three
"Handfuls, boil them in three Quarts of Water for the
"Space of half an Hour; to the ſtrained Decoction add
"Lenitive Electuary four Ounces, Spirit of Wine or Bran-
"dy half a Pint, Oil or Butter half a Pound." Let this be injected lukewarm, and retain'd as long as poſſible.

Four

Four Hours after the Operation of this Clyſter, if the Horſe is not very much relieved, the following may be given.

" Take Leaves of Mallows and Marſh-mallows, of each " three handfuls, as above directed, Linſeed and Fenu- " greek-ſeeds of each two Ounces, Coriander Seeds, Cum- " min Seeds, and Aniſeeds, of each two Drams, Bay-ber- " ries, Cubebs, and *Jamaica* Pepper, of each one Dram. " Let theſe alſo be boil'd for the ſpace of half an Hour, or " be infus'd in boiling Water for the ſpace of two Hours; " and to the Decoction add one Pint of Emetick Wine."

Let this be given as the former, and by the Help of theſe, the Adſtriction of the Bowels, or the Coſtiveneſs, may be remov'd. The Reader may alſo conſult that Chapter concerning *Surfeits*, where there are other things preſcrib'd, which will alſo be of Service.

But if the Horſe has, along with his Coſtiveneſs, violent Cholick Pains, proceeding from Wind and Phlegm; after the groſſer Excrements are diſcharg'd, the following Clyſter may be given.

" Take Red-roſe Leaves two handfuls, Tops of Centau- " ry the Leſs, and Wormwood, of each one handful. Boil " them in two quarts of Water to three Pints; and in the " Decoction diſſolve two Ounces of Diaſcordium, and " add half a Pint of Treacle-water, or Spirit of Wine.

This will infallibly take off the Pain, and lie in the Bowels like a Cordial, without giving him the leaſt Motion to dung, but compoſe and lull his Spirits, and in a Minute take off the violent Gripes; if the Pain ſhould chance to return, the ſame may be repeated; and, if neceſſary, the Doſe of Diaſcordium may be inlarg'd to three Ounces or more; and there is hardly any Kind of Cholick Pain but what may be carry'd off by it; and I have, by my own Direction, cured Horſes that have been in the greateſt Miſery imaginable, and have ſeen them in a Quarter of an Hour riſe up to feed, that before were like to daſh out their Brains againſt the Walls.

Cholicks and griping Pains in the Bowels of Horſes become ſuddenly mortal; that without any Regard to other Circumſtances, they ought immediately to be remov'd; and if Coſtiveneſs happens to continue upon the Uſe of the Remedies that are preſcrib'd for that Purpoſe, that Symptom will of Courſe go off in the Sequel of the Cure; for after the moſt urgent Symptoms are remov'd, the next In-

tention must be to destroy the Cause of the Distemper, otherwise it may return again.

Wherefore we recommend gentle Purging, with the Use of such Things as are hot and penetrating; and this we do contrary to the Opinion, tho' not altogether to the Practice of most Farriers, who believe Costiveness to proceed from inward Heat; whereas the Heat is only the Effect of Costiveness, and not the Cause, as is easily demonstrated, and is occasion'd chiefly from a cold, phlegmatick, tough Matter in the Stomach and Guts, which binds up the Excrements, which, when the Guts are full and press'd upon, cause Heat; therefore as all hot spicy things are proper to cut and destroy those Viscidities which cause the *Lentor*, and harbour Wind, they ought more or less to be exhibited in all Intentions that are requisite to the Cure of Costiveness. The following Purge may, for that Reason, be given, and will be found very profitable, after the Violence of the Cholick Pains are over, and the obstinate Stoppages of the Bowels are remov'd.

" Take Mallows and Marsh-mallows of each one hand-
" ful, Roots of Marsh-mallows six Ounces, Leaves of Se-
" na two Ounces, Bay-berries and Juniper-berries, of each
" an Ounce. Boil them in three Pints of Water to a Quart,
" strain out the Decoction thro' a Sieve or coarse Cloth,
" and add two Ounces of Syrup of Buckthorn. Or this:

" Take Mallows and Marsh-mallows of each two hand-
" fuls, Sena one Ounce, Jalap in gross Powder half an
" Ounce, Caraway-seeds of either an Ounce and a half.
" Boil them in the same Quantity of Water as above di-
" rected, to the Consumption of a third Part; and in the
" strained Decoction dissolve four Ounces of Manna. Or the following.

" Take eight Ounces of Manna, two Ounces of Cream
" of Tartar, dissolve them in a Quart of sweet Whey, and
" add eight Ounces of the Oil of Olives.

Either of these may be made use of after Clysters have been injected, the Horse being kept from feeding two Hours before, and two Hours thereafter. He may then be walk'd abroad for the Space of an Hour; and upon his Return it would not at all be amiss, if there was Tripe-Broth prepared for him, strew'd with Oatmeal; and if he seems unwilling to drink them, he may have two or three Quarts administer'd thro' a Horn, and the same Quantity repeated two Hours thereafter.

These

Theſe will help the Operation of the Phyſick, looſen and waſh down the viſcid ſlimy Matter, which not only fetters the Excrements, but intangles the Wind, which cauſes violent exceſſive Pain, by its Preſſure and Diſtention of the *Colon*: But if the Horſe be of ſmall Value, and that it is not worth while to be at all this Expence and Trouble about him, the following purging Drench may be made uſe of.

" Take Mallows and Marſh-mallows, of each two handfuls, or four handfuls of common Mallows (if Marſh-mallows are not eaſy to be had) Jalap in Powder two Ounces, Aniſeeds or Fennel-ſeeds an Ounce; boil them as above directed, and add to the Decoction four Ounces of common Treacle." Or this:

" Take half an Ounce of the bitter Apple in Powder, three Drams of Aloes, and one Dram of Diagridium; make them into a Ball with Flour and Butter." To be given as the former.

If your Horſe's Fundament be ſwell'd, which ſometimes happens to that degree before Raking and Clyſters are adminiſter'd, that he cannot ſtale; becauſe when the Excrements are harden'd and pent up in the great or ſtreight Gut, that being full, it preſſes upon the Neck of the Bladder, ſo as to hinder the Paſſage of his Urine; and if this Symptom does not wear off ſoon after thoſe Means have been uſed, Recourſe muſt be had with all Speed to thoſe things that are proper to keep down Inflammation; for which Purpoſe we recommend the Uſe of the following Decoction.

" Take of Red-roſe Leaves two handfuls, boil them in a Quart of Water for the Space of half an Hour; add to the Decoction a ſmall quantity of Brandy, Spirit of Wine, or Rum, and with a Sponge bathe his Fundament and Sheath often.

This Decoction ſhould always be made as warm as he can bear it, and the Spirits mix'd with it as often as it is uſed, *viz.* to every two Parts of the Decoction one of the Spirits.

The Yard to be kept up when the Fundament and Sheath are ſwelled.

His Yard ought to be kept up to his Belly with a gentle Bandage, becauſe the Humours fall into it with a very eaſy Influx, as it is both a ſoft and dependent Part, by which Means the Swelling and Inflammation are often kept up after the firſt Cauſe is in a great Meaſure remov'd, and ſometimes proves the Occaſion of a Gangrene; and therefore to keep that ſuſpended, the Farrier or Groom may

take a Piece of Canvas six or eight Inches broad, and fixing two Straps to each Corner forwards, they may be brought one on each Side over his Flanks, and fastened upon his Reins; the hind Parts should have the Corners cut off, according as the Swelling happens to be more or less on the upper Part of the Yard, with one single Piece of strong Tape fixed to it, which coming through between his Hips, is to be brought over the Croup, and tied to the other two; and when this Accident happens to a Stone-horse, his Stones ought also to be suspended in a Bag of soft flaxen Cloth, which may easily be fixed to the other.

By these Means the Return of the Blood will be render'd very easy, and the Swelling will thereupon asswage, which, for Want of such Method, has sometimes been the Cause of sudden Death.

But since we have ascrib'd the Cause of Costiveness and dry Gripes to viscid slimy Matter, ingender'd in the first Passages, it will be necessary, after the preceeding Means have been complied with, and the most urgent Symptoms are remov'd, to administer such things as are necessary to destroy the Remains of those Viscidities; for which Purpose the following Powder, to the quantity of a Spoonful, may be given every Morning.

" Take Gentian and Birthwort-roots, of each four " Ounces, Galangal, Zedoary, and Calamus Aromaticus, " of each one Ounce, the Tops of dry Wormwood and " the lesser Centaury, of each an Ounce and a half, Nut-" megs, Ginger, Black-pepper and Bay-berries, of each " half an Ounce. Make them into a fine Powder, and " keep it in a Glass or Gallipot close cover'd.

This may be given in White-wine, Ale, or in a Decoction wherein a handful of Rue has been boil'd, letting him fast two Hours before and one thereafter; and if your Horse be of small Value, you may give him every Day, among a few Oats, an Ounce of Antimony, and two Ounces of Flour of Brimstone; or you may make it up into a Paste, with a little Flour and Butter, continuing its Use for the Space of one Week.

Champt Rue and Garlick is also very serviceable in this Case; but all Remedies will prove the more successful, if you give your Horse Exercise; and indeed, that alone oftentimes proves sufficient; for by Exercise the whole Body is shook, and the *Lentor* in the Bowels, and the Excrements, readily fall downwards, to their Expulsion out of the Body.

I ſhall put a Period to this Subject, with an Account of two Horſes that were ſeiz'd with violent Coſtiveneſs, and where the Iſſue prov'd very different. *Two Inſtances of Coſtiveneſs.*

The one belong'd to a Gentleman, who, while travelling, was ſtopt upon the Road the ſecond Day of his Journey, his Horſe was in great Pain, ſhrunk up his Belly, often endeavouring to dung, and as often to piſs, but could do neither. I was told he had been taken up from Graſs a Week before he ſet out, and was obſerv'd to be coſtive all that while; but becauſe he was to have ſome Fatigue, they thought it unneceſſary to tamper with him, which, no doubt, was very reaſonable, had he not been more than ordinarily coſtive. The firſt thing done to recover him was raking, and afterwards he had a Pipe of Tobacco given him at his Fundament; the Smoke of the Tobacco prov'd a gentle *Stimulus*, and made him oftentimes eſſay to dung, but without Effect; ſo that at laſt, being in exceſſive Pain, hanging his Head, and turning it frequently towards his Belly, the Owner thought fit to ſend for a Farrier, who at firſt Sight ſaid he would die; however he went and prepar'd him a comfortable Drink, as he term'd it, which, by the Smell, ſeem'd to be ſome hot Aromatick Seeds boil'd in Ale. *The Firſt.*

After this he became much worſe, for there being no free Vent upwards or downwards, and the Wind being now more rarefy'd by the hot ſpicy things, and conſequently taking up more Space in his Bowels, he often lay down, and immediately ſtarted up again, ſhewing as much Pain and Agony as any Horſe could poſſibly be in. I adviſ'd the Gentleman to have him rak'd once more, by a Boy that had a ſmall Hand and Arm, who being ſatisfied with the Reaſons which I gave him, had it done accordingly, tho' it was not without ſome Difficulty, for the Horſe ſhrunk very much, and endeavour'd conſtantly to lie down. But at laſt, when he had been thoroughly rak'd, he began to throw out ſeveral hard Balls of Dung of his own Accord, and at the ſame time ſtal'd a little, whereupon he had the Entrance into his Fundament done with Soap, which made him dung very plentifully, and he piſs'd ſo long that the Stable was all a-float about him: After this a Clyſter of Broth wherein Beef had been boil'd was given him, with a handful of Salt and half a Pound of Butter diſſolv'd in it, which brought away a great deal of Dung, and abundance of ſlimy Matter. He eat nothing that Night, which was pretty late, but towards the Morning he began to feed very plentifully, and was quite recov'd of his Indiſpoſition.

Had this Diſorder continu'd upon him a little longer without a Vent to the hard Excrements, which were ſo firmly impacted in the ſtreight Gut, a violent Inflammation of that Gut, and of the Neck of the Bladder, muſt have ſoon happen'd, which, without the utmoſt Diligence, would have brought him ſuddenly to his End; for in that Caſe it would have been very difficult to have fetch'd out the Dung, which was the only Means to preſerve him from thoſe Accidents.

The ſecond. But this will be clearly illuſtrated in the other Inſtance, which was of a Dragoon's Horſe in the Regiment to which I belong'd; who, after a full five Weeks March, coming to ſtand at his Eaſe, grew exceeding coſtive, and had his Fundament and Sheath very much ſwell'd.

He was committed to the Care of one who was tolerably well skill'd in many of the common things, but being wholly unacquainted with the Structure and Mechaniſm of that Creature, who was the Subject of his Art, committed a grand Miſtake, in giving him a ſtrong Doſe of purging Phyſick, there being no Vent for the Paſſage of the Excrements downwards, and the Horſe having no Capacity to vomit and diſgorge himſelf upwards, was put into the moſt violent Agony imaginable, and at laſt dy'd in ſtrong Convulſions.

Perhaps this Perſon may, by ſuch a Method, have ſucceeded in Caſes of leſs Obſtinacy, and where there was little or no Swelling of the Fundament; and if there had been a Poſſibility of making the Horſe vomit, he might have ſucceeded even in this, for then the Phyſick would have gone off that Way; and after ſeveral Diſcharges by the Mouth, the Remainder might have gone downwards, as it oftentimes happens to human Bodies, becauſe the ſtraining to vomit makes a ſtrong Compreſſion of the Muſcles of the lower Belly, which greatly forwards the Ejections by the Fundament; and therefore in ſome obſtinate Caſes of this Nature, the beſt Phyſicians have order'd Vomits with Succeſs. But as it is quite otherwiſe with Horſes, and that their Stomachs are not otherwiſe to be mov'd with the ſtrongeſt *Stimuli*, than to create Sickneſs, and cauſe them to ſlaver a little, Purging is not to be attempted in any ſtubborn Coſtiveneſs, but Clyſters.

And if this Method had been taken in the Inſtance now before us, and due Care obſerv'd to keep the Swelling of his Fundament under, as he was a young Horſe, and not much impair'd in his Strength, he might have eaſily overcome that Diſorder.

CHAP.

CHAP. XXXVII.

Of the Lax or Scouring.

FOR the better underſtanding of thoſe Diſorders, we ſhall rank them under four different Kinds. We have elſewhere obſerv'd, that when the Excrements have lain ſome time in the Guts, the Juices, by their Putrefaction, turn ſharp and corroſive, and by that Means ſtimulate the Inteſtines, to ſhake off what is contain'd in them. But this does not always follow ſuch a Stagnation of the Excrement, as may be obſerv'd from what has been ſaid in the preceding Chapter; for ſometimes, before ſuch a Diſcharge can happen, a Horſe will be endanger'd of his Life; and therefore we may reaſonably aſcribe this Difference ſometimes to the different Conſtitutions of Horſes, and ſometimes to the Difference of their Food, there being ſome Kinds more liable to Corruption than others. But however that be, it is very certain that the *Lax* and *Scouring* in Horſes is oftentimes the Effect of a preceeding Coſtiveneſs; and therefore we ſhall account this, and all critical Looſneſſes which tend to the Solution of any Diſeaſe, to be of the firſt Kind.

Divers Kinds of Looſneſſes.

The ſecond Kind of Looſeneſs, is that which proceeds chiefly from Want of Digeſtion; for by that Means a Scouring may happen, without any previous Symptoms of Coſtiveneſs; and when it is ſo, a Horſe ſuddenly falls away and loſes his Fleſh, and likewiſe his Appetite; but this may be further know by the Diſcharge, for many things that he eats will come away whole, and his Dung will be full of Shreds of Hay, and ſometimes accompanied with ſlimy Matter.

Thirdly, A Looſeneſs and Scouring often happens when the Pores of the Skin, the Urinary, or other Diſcharges, are obſtructed; for by that Means, when the excrementitious Parts of the Blood have not a free Vent thro' the common Paſſages, they are deriv'd in a more than ordinary Quantity into the Aperture of the Guts, but particularly in the Gall-pipe and *Pancreatick* Duct; ſo that they may be of different Colour and Conſiſtency, according to the Predominancy of the Juices that flow into them. When moſt of it is derived from the inteſtinal Glands, the Matter will be clear and watry, or clear and glaſſy, not unlike that which *Solleyſell* obſerves in this third kind of Cholick; but when it proceeds moſtly from the Gall-pipe and *Pancreatick* Duct, it will

be then tinctured with a yellowiſh Colour, and if there happens to be a very great quantity of the Gall diſcharg'd with the Excrements, whatever is voided from the Fundament, muſt of Conſequence be of a deep reddiſh Colour, and is the ſame which the above-mention'd Author terms the red Gripes, which conſtitutes his ſixth Kind of Cholick.

Laſtly, A *Lax* or *Scouring* ſometimes happens from viſcous ſlimy Matter hindring the *Chyle* from entring into the lacteal or milky Veſſels, and in this Caſe the Excrements are uſually of a pale light Complexion, as they conſiſt chiefly of *Chyle*.

Molten Greaſe. But all theſe are only different ſpecies of a *Diarrhæa*, and when the Scouring is large, as it happens to ſome full-body'd young Horſes, a white greaſy Matter-like Fat comes away in the Dung, and this is what Farriers call *Molten Greaſe*, which is of the ſame Nature with the greaſy *Diarrhæa*, which ſometimes happens to Men of groſs Habits, as well as to Horſes, and ſeems to be occaſion'd when the Glands of the Inteſtines are more than ordinarily open'd, whereby that Matter is evacuated from the Blood into the Guts, which ſhould otherwiſe be depoſited among the Fat.

The Cure of a Lax or Scouring. But in order to the Cure, it ought to be obſerv'd, that in all thoſe Scourings that are of the firſt Kind, and are only the critical Diſcharges of ſome Diſeaſe; there are ſeldom or never any bad Accidents attending them, unleſs the Diſeaſe has been of ſuch Continuance as to waſte and attenuate the Body; and therefore when the Sickneſs abates by any ſuch Diſcharge, the beſt Way is not to be over-haſty to ſtop it, but it ought rather to be encouraged when it proves imperfect; and that muſt be done by Medicines that are moderately purging. But becauſe all Diſcharges that proceed from the Inteſtines may degenerate into the worſer Sort, Care ought to be taken not to let it run on too long, but it may be ſtopp'd by the Methods hereafter laid down for the Cure of the other Species of a *Diarrhæa*; we ſhall therefore proceed to the next Kind, where a Horſe loſes his Appetite; and when the Want of Digeſtion is manifeſt from an imperfect Comminution of the Dung, that is, when ſome Part of the Food comes away whole as it is eat.

In this Caſe all thoſe Things that we have already laid down for ſtrengthening the Stomach are to be uſed; for which Purpoſe we alſo recommend the Uſe of *Diapente*, to thoſe that like it; but it is not one Doſe that will anſwer the End, but it ought to be repeated every Day, and

ſo muſt any other Stomachick Medicine, before any extraordinary Effect can be wrought.

And becauſe this Diſeaſe is both in the Stomach and Guts, the following Clyſter may be given as ſoon as you perceive him begin to recover his Appetite, unleſs the Looſeneſs begins alſo to abate with the other Symptoms, and in that Caſe it may be let alone.

" Take of Red-roſe Leaves two handfuls, the Roots of " Gentian and round Birthwort of each one Ounce, Ga- " langal half an Ounce, Bay-berries, Aniſeeds, and Fennel- " ſeeds, of each two Drams. Let the Roots and other " hard Ingredients be bruis'd ; afterwards boil the whole in " three Quarts of Water for the Space of half an Hour ; " or let them be infus'd four Hours in boiling Water ; then " pour off the Liquor, and diſſolve in it three Ounces of " the Oil of Rue, which muſt be injected into the Horſe's " Fundament lukewarm.

This may be repeated once or twice, but if the Looſeneſs ſtill continues, and the Horſe grows weak, it is a very bad Sign, eſpecially if he refuſes to feed.

The Cure of the ſecond kind of Looſeneſs.

The next kind is that where the Excrements are tinged yellow, or of a deep reddiſh Colour, proceeding, as we have obſerv'd, from a too great Profuſion of the Gall and Pancreatick Juice, *&c.*

In this a Horſe may be firſt of all purged with the following Drench.

" Take Red-roſe Leaves two handfuls, Monks Rhu- " barb four Ounces, *Turkey* Rhubard three Ounces. Let " theſe be ſliced and boiled with the Roſe-leaves in three " Pints of Water, for the Space of one Hour ; and in the " ſtrained Decoction diſſolve an Ounce and half of Diaſ- " cordium." Or this:

" Take of the beſt Rhubarb in Powder, two Ounces, " Cream of Tartar one Ounce, Diaphoretick Antimony " half an Ounce. Let this be given in a Pint of red Wine.

If the Horſe be of ſmall Value, two Ounces of the *Pulvis Cornachini* may be us'd, which the Reader will find preſcrib'd in a preceeding Chapter, and to it may be added half an Ounce more of Diaphoretick Antimony, for after Purging has been once or twice repeated, thoſe Medicines which promote Sweat, and the other Secretions, are to be us'd, as they make a Revulſion, and conſequently leſſen the Diſcharges by Dung ; wherefore we recommend *Diaſcordium*, *Mithridate*, and *Venice-Treacle*, or *London-Treacle*, which may be exhibited in the following Manner. " Take

" Take Treacle-water one Pint, *Venice*-Treacle, or " Mithridate, two Ounces. Let the Mixture be ſtirr'd well " about, and given through a Horn. Or this :

" Take one handful of Water-Germander, Red-roſe " Leaves and Rue, of each half a handful, *Virginia* " Snake-weed and Scorzonera, of each two Ounces. Boil " them in a Quart of Water half an Hour ; and to the " ſtrained Decoction add two Ounces, or two Ounces and " a half of Diaſcordium. Or,

" Take of Diaſcordium three Ounces, diſſolve it in a " Decoction of Red-roſe Leaves, and give it through a " Horn ; two Ounces of *Venice*-Treacle, or Mithridate, " or three Ounces of *London*-Treacle, may be given in the " ſame Manner, taking Care at the ſame time to keep the " Horſe well cloath'd, and to have him often comb'd and " rubb'd, to open the Pores, the better to promote Sweat " and inſenſible Tranſpiration.

The following Drench may alſo be given with good Succeſs, to aſtringe and dry up the Stomach and Bowels, *&c.*

" Take Roſe-water and Plantain-water, or a Decoction " of Red-roſe Leaves and Plantain one Quart, Treacle-" water half a Pint, *Armenian* Bole and Sealed Earth, " or *Lemnian* Earth, of each half an Ounce. Diſſolve in " the Mixture two Ounces of Diaſcordium, and of Roch-" Allum ſix Drams.

This muſt be repeated two or three Days ſucceſſively, and unleſs the Scouring be very violent, it will certainly put a Stop to it.

But the Farrier is to obſerve, that if a Horſe has a Fever upon him, which does not diminiſh, but increaſes with the Looſneſs ; thoſe things which act more immediately upon the Bowels are then to be made uſe of ; therefore the Clyſter preſcribed in the preceeding Chapter, to remove violent Pains in the Guts, may be injected ; or the following, which will yet be more efficacious in this Caſe.

" Take of Guaiacum half a Pound, Saſſafras four Ounces, " boil them in four Quarts of *Smith*'s Water, wherein they " quench their hot Irons, until one half of the Water be " conſum'd ; then add to the Decoction Red-roſe Leaves, " the Tops or Leaves of Briar, and the Leaves of Bramble, " of each a handful ; or inſtead of theſe, two handfuls of " Plantain, and when it has boil'd a Quarter of an Hour " longer, take it from the Fire, and in the ſtrain'd Decoction " diſſolve four Ounces of Diaſcordium without Honey, and " of Opium half a Dram. Or this : " Take

" Take Henbane and white Poppy-ſeed, of each four " Ounces, Red-roſe Leaves two handfuls, Pomegranate " Bark two Ounces. Boil them in two Quarts of *Smiths* " Forge-water to three Points, diſſolve in it four Ounces of " Diaſcordium, or three Ounces of Mithridate, or *Venice*- " Treacle, and half a Dram of Opium." Or the following may be us'd in haſte, or for a Horſe of ſmall Value.

" Take a Quart of the foreſaid Water, warm it over the " Fire, and diſſolve in it two Ounces of Diaſcordium, " and the like Quantity of Roch-allum.

Theſe Clyſters are always to be made in a leſſer Quantity than thoſe that are purging; and the Horſe's Tail to be kept cloſe to his Tuel, that he may retain them as long as poſſible; and as ſoon as he flings out the firſt, which perhaps may not be in the Space of twelve Hours, it muſt be followed with another, and ſo on, until the Looſeneſs is quite ſtopt, which may eaſily be done by the help of theſe Clyſters, unleſs his Strength be quite waſted, and that he has loſt all Senſation in his Bowels.

The laſt Kind of Scouring, how cur'd.

We come now to the Cure of the laſt Sort of Scouring which we mention'd, to wit, when the Chyle is diſcharg'd with the Excrements; and as this Indiſpoſition proceeds from ſlimy Matter obſtructing the Paſſages in the Lacteal Veſſels, the propereſt Method is by purging, for which Purpoſe we recommend the following.

" Take *Epſom* Salt ſix Ounces, Cream of Tartar two " Ounces, diſſolve them in a Gallon of Water, and give " the whole through a Horn at ſeveral Times." Or,

" Take *Epſom* Salt ſix Ounces, Cream of Tartar three " Ounces, Salt of Tartar half an Ounce; diſſolve them in a " plentiful deal of Water, and let 'em be given as the other.

Let Salt of Tartar and *Sal Prunellæ* be alſo diſſolv'd in his common Drink, for all thoſe Diluters are the moſt proper to waſh off that viſcid Matter which adheres ſo cloſely to the Guts, and hinders the Chyle from entring into its proper Veſſels, eſpecially when they are us'd plentifully; but if this Sort of Flux ſhould proceed from a ſtrumous Obſtruction, as it ſometimes happens to human Bodies, it would prove incurable.

As to that which Farriers call *Molten Greaſe*, it being for the moſt Part the Concomitant of every large Scouring, that Symptom generally wears off in the Proceſs of the Diſtemper, and requires no particular Management diſtinct from

from what has been already preſcrib'd for the third Sort of Looſeneſs, *viz.* Purging and aſtringent Clyſters, with the Aſſiſtance of thoſe Things that are proper to promote a Breathing thro' the Pores; but becauſe in all violent Diſorders of the Guts, there is, for the moſt Part, a Weakneſs in the Stomach alſo, it can never be amiſs to exhibit ſuch Things as are proper to procure a good Digeſtion, at the ſame time that other Means are us'd to carry off the more urgent Symptoms; and theſe ought to be continued, eſpecially to a Horſe of Value; and indeed it is for Want of ſuch Helps that many Horſes dwindle away, or fall into other Diſtempers, after the Looſeneſs has in a great Meaſure been overcome.

Concerning the Food that is to be given in ſuch Diſorders, nothing can be more proper than what *Solleyſell* recommends, *viz.* the cleaneſt and beſt Hay, Bran moiſten'd with Claret, and parch'd Barley. But as all thoſe Diſorders have their primary Cauſe from Colds, ill Uſage, but eſpecially from foul corrupt Feeding, and Want of Exerciſe, the Owner can never be at a Loſs to keep an Eye over his Horſe, and to learn his Conſtitution, and what he is able to bear, and by that Means theſe Accidents may, in a great Meaſure, be prevented.

CHAP. XXXVIII.

Of the Bloody Flux.

A Bloody Flux. THIS is only an advanc'd Degree of a *Diarrhæa*, eſpecially of that Sort which proceeds from a Profuſion of the pancreatick and bilious Juices; for when the Diſcharge from thoſe Parts is very much inlarg'd, it cauſes ſtill a greater Influx of Blood and Humours towards them, which being more than can be converted into the proper Juices, forces itſelf through the Inteſtines of the Veſſels, and is diſcharg'd with theſe Juices into the Guts.

Its different Appearances. Sometimes it reſembles the Waſhings of Fleſh, ſometimes there is a Mixture of purulent Matter or Corruption along with it, and ſometimes little or nothing comes away but pure Blood; but this laſt Kind proceeds, for the moſt Part, from an Appetite of the internal Hemorrhoidal Veſſels.

But it is to be obſerv'd, a Bloody-flux very ſeldom happens to Horſes, inſomuch that *Solleyſell* has given it no Place

Place among other Diſeaſes of the like Nature, and for my own Part, I cannot ſay I have ever ſeen Blood come from a Horſe's Fundament, otherwiſe than by the Preſſure of hard Dung upon the great Gut, which by that Means has only ſqueez'd out a very ſmall Quantity from the Veſſels thereof; yet becauſe that Diſtemper may, without doubt, ſeize ſome Horſes, as it is not inconſiſtent with the Oeconomy of that Animal, and as moſt Authors I have perus'd, beſides *Solleyſell*, aver, they have met with it in all its different Appearances, I ſhall therefore give ſuch Directions as are neceſſary for the Cure.

The Cure.

And in order thereunto, becauſe a Bloody Flux happens, for the moſt Part, before the Body has been very muſt waſted by the Looſeneſs, it is proper, in the firſt place, to make a Revulſion, by taking a moderate Quantity of Blood from the Neck-vein; this is convenient in all Fluxes of Blood from the inferior Parts, unleſs the Horſe be exceeding weak.

If there be a Mixture of purulent corrupt Matter after Blooding, moderate Purging will be very proper, with ſuch Things as have been preſcrib'd in the preceeding Chapter; all the other Medicines recommended to make a Revulſion by Sweat and inſenſible Tranſpiration, are alſo to be comply'd with; as alſo the aſtringent Clyſters there recommended, which in moſt Caſes will anſwer the End, I ſhall therefore only add one more.

" Take a Quart of Forge-water, and boil in it four Ounces of Oak-bark, two Ounces of Tormentil-roots, Balauſtines and Red-roſe Leaves, of each a handful. To the ſtrain'd Decoction add three Ounces of Diaſcordium, an Ounce of Mithridate, and half a Dram of Opium. Let this be injected warm, and repeated as often as there is Occaſion; and if you be provided with a Syringe that has a pretty large Pipe, you may ſometimes add two Ounces of Bole in Powder, or Sealed Earth.

But above all things, you are to avoid mixing Oil or Butter, or any other greaſy Matter, with Clyſters that are of this Intention, as is common among Farriers; for theſe things are directly contrary to the Nature of thoſe Applications, and will not only render their Operations ineffectual, but increaſe the Diſeaſe; and inſtead of aſtringing and fortifying the Bowels, will weaken them, by cauſing a greater Relaxation of their Fibres.

CHAP.

CHAP. XXXIX.

Of Worms, Bots, and Trunchions.

Worms of divers Kinds bred in Horſes.

THERE are ſeveral Kinds of Vermin bred in the Bodies of Horſes, which go under the Denomination of *Bots*, *Worms*, and *Trunchions*. The Worms are of divers Colours and Shapes, ſome reſemble Earth-worms; others are ſmall and white, ſharp at both Ends like Needles. The *Trunchion* is thick and ſhort, and the *Bot* is not unlike a ſmall Catterpillar; the laſt are commonly found in the ſtreight Gut, eſpecially of ſome Horſes when they are firſt taken from Graſs.

Solleyſell has taken Notice of another Kind, which reſemble Wood-lice, only that they have fewer Feet, are of a deep reddiſh Colour, velveted on the Back like a Bot, and made up of ſeveral Folds. Theſe, he ſays, are bred in the Stomach, and abide in it, and devour all the Nouriſhment; ſo that a Horſe, if he be never ſo great a Feeder, cannot thrive while they are in his Maw. The ſame Author obſerves further, that thoſe Kind of Worms are oftentimes the Occaſion of a Horſe's Death, by eating Holes in the Stomach; and ſays, he has ſeen Thouſands of them in the Stomachs of dead Horſes.

But that Author might be eaſily impos'd upon by ſuch an Inſpection; for it is very certain, as ſoon as an Animal dies, thoſe Parts that turn firſt to Putrefaction, as the Aliment in the Stomach, which is kept under cloſe Cover, will ſoon breed Vermin, and that of different Kinds, ſince it is reaſonable enough to believe, that the Seeds of divers Inſects may be depoſited among the Food of moſt Animals, and be thus convey'd into the Stomach, and may be brought to Life very ſuddenly after the Animal is dead; but that Worms, or any other Kind of Vermin, can either be bred or ſubſiſted in the Stomach of any living Creature, is as impoſſible as for a Mouſe to live under a Mill-ſtone while it is grinding; for it is very well known, that the muſcular Action of the Stomach, by which it is kept in conſtant Motion, would much ſooner deſtroy any ſuch Creatures, if it was poſſible for them to breed there, than the common Food which they eat, that being harder and more difficult to be broke than they.

No Worms can be bred in the Stomach while the Horſe is alive.

And

And therefore *Markham*'s Aſſertion muſt be as falſe as ridiculous, and only taken upon Truſt, from the Speech of ſome Mountebank; where ſpeaking of the Red Worms, he ſays, "He "has ſeen Horſes whoſe Stomachs have been eaten quite "through with them, ſo that the Meat which they eat "could not abide in their Stomachs, but fell, upon the "ſwallowing, into the Body, making the Body ſwell like "a Tun, ſo that they dy'd with huge Torment. *A falſe Aſſertion of* Markham.

Neither will the Hiſtories we have of Worms being voided at the Mouths of Men and Women, however authentick, avail any thing to prove their ſubſiſting in the Stomach, ſince it is very certain they have been thrown upwards like the Gall or Excrements in the *Iliack* Paſſion, when the Periſtaltick Motion of the Guts has been very much inverted; and theſe have been but a very ſhort while in the Stomach before their Ejectment.

We may therefore very reaſonably affirm ſince the modern Diſcoveries have ſhewn us the true Uſe of the Stomach, that this Sort of Vermin can only be bred and ſubſiſted in the Guts of any live Animal, and not in the Stomach; and when they are found there at any Time, it is either after the Animal is dead, that the Action of the Stomach ceaſes, or elſe they are brought into it in the Manner we have already mention'd. *All Worms bred in the Guts.*

Now the Cauſe of Worms is from foul Feeding, and very often from a bad Digeſtion, for that will have the ſame Effect as corrupt and unwholſome Food. For the Aliment, when it is not ſufficiently broke and comminuted in the Stomach, turns to Crudities, and is render'd the more liable to putrify in the Guts; ſo that a proper Matter is furniſhed for the Production of Vermin: And therefore we may often obſerve, that as Children, even ſo young Horſes, are more liable to be infeſted with Worms, than thoſe that are grown to Maturity. And this may probably proceed from the Weakneſs and Flexibility of the ſolid Parts, whereby, tho' their Appetites are at that time ſenſible and vigorous, yet the Stomach muſt act leſs forcibly upon the Aliment, than when they are arriv'd to a more advanc'd State; ſo that of Conſequence they may be render'd more liable to the Production of thoſe Animals. *The Cauſe of Worms.*

The Signs are all thoſe that appear in a Cholick, for beſides that thoſe Inſects occaſion *The Signs.*

a Titillation in the Guts, the viſcid, groſs and putrify'd Matter, whereby they are ingender'd, cauſes a Vellication and frequent Twitches, and withal ſo much Pain, that a Horſe appears to be in all the Agony imaginable, lying down and ſtarting up again by Fits, oftentimes ſtriking his Belly with his hind Foot, and oftentimes rubbing his Fundament againſt any Wall or Poſt that happens to be near him; and when there happens to be many of thoſe Creatures, eſpecially when they are harbour'd in the great Gut, they appear plentifully in the Dung.

The Cure. The Cure conſiſts in all thoſe things that are proper to deſtroy the Viſcidities in the Bowels, and at the ſame time to ſtrengthen the Stomach; for by that Means a Horſe digeſts his Hay and Provender, and nothing but the groſſer Parts go downwards into the Guts, ſo that of Conſequence thoſe Creatures cannot eaſily be ingender'd there.

And becauſe Purging is of the moſt immediate Efficacy in all ſuch Caſes, it is therefore the moſt proper to begin the Cure that Way; and for that Purpoſe, if there be no Obſtructions in the ſtreight Gut, which may firſt require the Uſe of Clyſters, we recommend the following.

" Take Tanſey Flowers and Coraline, of each a handful,
" Sena one Ounce, Jalap in groſs Powder half an Ounce:
" Boil them in a Quart of Water, and to the ſtrain'd De-
" coction add two Ounces of Syrup of Buckthorn. Or:

" Take two Ounces of the *Pulvis Cornachini*, or Coun-
" teſs of *Warwick's* Powder, and give it in a Decoction
" wherein Rue has been boil'd. Let your Horſe be kept from Feeding two Hours before, and two Hours thereafter, giving him moderate Exerciſe to help the Operation of the Phyſick; and at Night he may have ſcalded Bran to eat.

But theſe are the propereſt Purges to deſtroy Worms and wormy Matter, that have *Mercurius dulcis*, or *Æthiops mineral* join'd with them; as follows:

" Take of the beſt Aloes one Ounce, *Mercurius dulcis*
" half an Ounce, Diagridium two Drams. Make theſe
" into a Ball with Liquorice Powder or Flour, and as
" much Butter as is ſufficient. Or thus:

" Take of the beſt ſhining Aloes an Ounce and a half,
" *Æthiops mineral* an Ounce, Diagridium and Diaphore-
" tick Antimony, of each two Drams. Make them into
" one or two Balls, as above directed, and let them be
" given faſting.

Either

Either of these being three or four times repeated, will destroy all Manner of Worms, and carry off that slimy and corrupted Matter in which they are ingender'd, and without the least Danger.

The *Mercurius dulcis* may be had at any Chymist's or Apothecary's; as for the *Æthiops*, it is made of equal Parts of Quicksilver and Brimstone, rubbing them in a Mortar till they are incorporated and turn to a black Powder.

After your Horse has been sufficiently purg'd with one or other of the above-mentioned Remedies, the following Powder, out of *Solleysell*, may be given for a Week or a Fortnight, and it will be of great Service to destroy all the Remains of the Distemper.

" Take the Roots of Master-wort, the Leaves and " Roots of Radishes, greater Centaury, and Tansy; dry " them in the Sun in the Summer, and in an Oven, with a " moderate Degree of Heat, in the Winter; then take a " Pound of each Germander, Ground-pipe, Roots of An- " gelica, and Elecampane, all dried in the Shade, of " each half a Pound, Coraline, or Sea Moss, and Liver " Aloes, of each four Ounces, Galangal, Nutmeg, and " *Sal Prunellæ*, of each two Ounces. Reduce all the " Ingredients to Powder separately, then mix them, and " keep them in a Leathern Bag, or in a Glass Bottle close " stopt. The Dose is an Ounce for small Horses, two " Ounces and a half for large Horses: Mix it with half " an Ounce, or three Drams of old Treacle, or an Ounce " of Treacle *Diatessaron*, or Mithridate; then give it the " Horse in a Pint of White-wine, and afterwards walk " him in his Cloaths.

But this Powder will be much better, if the first Ingredients be wholly left out, and instead of them be substituted four Ounces of the Flour of Brimstone, and two Ounces of the Powder of Myrrh; neither is there Occasion to be much scrupulous about the Dose, for the smallest Horse may take two Ounces of this Powder, and it will be little enough.

There are many other Remedies appropriated to destroy Worms, which are all very good when rightly apply'd, as Rue, St. *John*'s Wort, Tops of Broom, Male Fern, Savin, Citron-seeds, Wormwood, and Wormseed, Garlick, Onions, and such like things; but none can come up to *Mercurius dulcis*, or the *Æthiops Mineral*, for immediate Efficacy.

Moſt Farriers, for Cheapneſs, make uſe of Allum, black Soap, burnt Vitriol, and ſuch like things: Some exhibit corroſive Sublimate, or red Precipitate, as much as will lie upon a Silver Penny; but as theſe laſt Medicines, *viz.* the Sublimate and Precipitate, cannot be us'd internally without great Danger, eſpecially to brute Creatures, who can never be brought to take ſuch things as are proper to carry off their ill Effects, they ought therefore not to be given in any Caſe; for albeit they may, by virtue of their powerful Efficacy, ſucceed in ſome Circumſtances, where a Horſe happens to be robuſt and ſtrong; yet when it is otherwiſe, if they are not the Occaſion of ſudden Diſorders, they will lay the Seeds of a bad Conſtitution, and render a Horſe unſerviceable for the future.

CHAP. XL.

Of Pain in the Bowels cauſed by ſudden Accidents.

WE have already taken Notice, that moſt of the Diſeaſes of the Guts will cauſe Cholick Pains, when they come to an Extremity; but Horſes, who are oftentimes under the Direction and Management of bad Tutors, and are themſelves only guided by Inſtinct, muſt therefore be render'd liable to many Inconveniencies, and to none more than thoſe which ſhew themſelves immediately in the Bowels; for the drinking cold Water when a Horſe is hot, or if at that time he be rid deep into the Water, or if he be ſuffer'd to cool of a ſudden when he has been at hard Exerciſe, any ſuch Miſmanagement very frequently brings on the moſt intolerable Diſorders, as we daily obſerve.

Pains cauſed by drinking when hot, &c.

And this is eaſy to be accounted for, becauſe when the Body is hot, and the Pores open, any ſudden Cold cauſes them to be immediately ſhut up, ſo that all the common and neceſſary Diſcharges are in a great Meaſure hinder'd, by which Means the Veſſels of the *Colon*, and ſometimes of the Stomach and other Bowels, are alſo cramm'd and diſtended; and this is the true Cauſe of the Pain, and likewiſe of the Wind and Flatulency that is obſervable in ſuch Caſes; for although Wind may often proceed from other Cauſes, as from the Viſcidity and Slimineſs of the Matter that is ſometimes harboured in the Bowels; yet in this

this Caſe it is chiefly occaſion'd by their over-great Relaxation, whereby they loſe their Tone and Periſtaltick Motion, which is abſolutely neceſſary to the Expulſion of the Wind as well as the Excrements.

As for the Signs of theſe ſudden Diſorders, they are ſufficiently known to every one; we ſhall therefore proceed to the Cure.

The Cure of thoſe ſudden Diſorders.

And firſt of all, if the Horſe be hot and feveriſh, as it ſometimes happens, a moderate Quantity of Blood may be taken from the Neck-vein, after which a Clyſter ought to be injected, and ſuch a one as will ſtimulate the Guts, and promote their Periſtaltick Motion, for by that Means the Excrements and Wind will not only be ejected, but the ſtagnant Blood muſt alſo be forwarded; for which Purpoſe nothing can be more ſerviceable than a Quart of Emetick Wine given lukewarm: But becauſe this is not to be had without Expence, it would therefore be worth any Gentleman's While to make it, and keep it by him, and that is eaſily done, only by infuſing four Ounces of the *Crocus Metallorum*, or Liver of Antimony, in a Gallon of White-wine or Ale, for ſeveral Days, which will give it an emetick Quality.

But inſtead of the Emetick Wine, the following Clyſter may be uſed.

" Take of the Decoction of Mallows and Marſh-mal-
" lows, or of Broth that is not too fat, two Quarts, diſ-
" ſolve four Ounces of Syrup of Buckthorn, and two
" handfuls of common Salt." Or this:

" Take two Quarts of warm Water, and diſſolve in it
" half a Pound of *Epſom* Salts, and two handfuls of com-
" mon Salt." Or the following:

" Take of the Decoction above-mention'd two Quarts,
" Aloes in Powder two Ounces, Gambuge an Ounce. Let
" theſe be ſtirr'd into the Decoction when it is about blood-
" warm, adding at the ſame Time a handful of Bay Salt,
" or common Salt.

Let either of theſe be given, taking Care to keep the Horſe moving until the Operation is quite over; and this Method will be the more neceſſary if the Horſe has been full Fed; but if it be otherwiſe, that he was empty when this Accident happen'd to him, a Clyſter of Broth, or of the emollient Herbs and brown Sugar, or Moloſſus, will ſuffice.

After the purging Clyſter has finiſhed its Operation, Sweat ought, as ſoon as poſſible, to be promoted, and that very plentifully; wherefore,

" Take of old *Venice-Treacle*, or of Mithridate, three " Ounces, *Matthews*'s Pill two Drams, Camphire ſix " Grains: Mix them well together, and then diſſolve them " in a Quart of warm Beer, and give it through a Horn, " cloathing him very warm.

And to comfort his Bowels, the Clyſter preſcrib'd in a preceeding Chapter to eaſe violent Pains in the Guts, may be given, or the following, which is of like Efficacy, and will alſo help to promote the Sweat.

" Take Red-roſe Leaves two handfuls, dry'd Mint and " Sage, of each one handful, Galangal bruis'd one Ounce, " Bay-berries ſix Drams. Boil them half an Hour in three " Pints of Water, and to the ſtrained Decoction add Spi- " rit of Wine or Brandy one Pint, and alſo diſſolve in it " four Ounces of Diaſcordium." Let this be given Milk-warm, keeping his Tail cloſe to his Fundament, until he has no Motions of throwing it out.

But a Horſe is ſometimes ſo reſtleſs with the Violence of thoſe Pains, that there is no keeping him on his Legs, but he throws himſelf down every Minute; and ſome Horſes kill themſelves, by ſtriking their Heads againſt the Walls, who otherwiſe might eaſily be recover'd if they could be managed. Theſe ought to be buried in a Dunghill, all but the Head, there being no Caſe that requires that kind of Sweating more than this; for it is very much to be ſuſpected, that the giving of cold Water to a Horſe when he is hot, and waſhing him about his Breaſt and Belly, may often cauſe an immediate Foundering in the Cheſt, and this ſeems reaſonable enough from the extraordinary working and heaving of the Flanks, which is obſervable all of a ſudden in ſome Horſes after ſuch Accidents. But the Reader may have Recourſe to what has been already ſaid under that Head.

CHAP. XLI.

Of the Yellows or Jaundice.

The Nature of the Yellows, and its different Cauſes.

THERE is no Diſtemper that happens more frequently to Horſes than the Jaundice or Yellows, and proceeds from the Obſtructions either in the Gall-pipe, cauſed by

by Slime or gritty Matter, or when the Roots of thoſe little Ducts that open into that Pipe are ſtopt by the like Matter, or compreſs'd by a Plenitude and Fulneſs of the Blood-veſſels that lie near them.

Sometimes that Diſtemper proceeds from or accompanies hard and ſchirrous Obſtructions in the Liver, and ſometimes the Blood will be tinctur'd in malignant and peſtilential Sickneſſes, as the Diſeaſe mentioned by *Solleyſell*, which he terms the *Spaniſh Evil*, and which he obſerved to be predominant among the Horſes in his Time, for ſeveral Years together, and to many prov'd mortal; ſometimes the ſame Symptoms will alſo happen upon the Bite of an Adder, or any other venomous Beaſt.

In theſe laſt Caſes of Poyſon and Infection, the Liver no doubt is inflam'd and ſwell'd, and by that Means bears its Proportion, from which the Yellowneſs no doubt happens; but as this is only a Symptom, which may be remov'd by all thoſe things that are proper to carry off the Fever; and as we have already laid down ſuch Methods as are proper in Caſes of Malignity, we ſhall only here conſider it as any other Secretion that is obſtructed, and provide ſuch Means as are proper to open the ſaid Obſtructions.

When the Gall-pipe, or rather when the Roots of its common Ducts are any ways ſtopt up, the Matter which ſhould be converted and turned into Gall, is taken up by the Veins, and carried back again into the Maſs of Blood, giving it a yellow Tincture; ſo that all the Parts of a Horſe that have a Capacity of ſhewing the Colour, as the Eyes, the Inſide of the Lips, and even the Slaver from the Mouth, will appear yellow. But as this Diſeaſe is contrary to that Sort of Scouring where there is a Profuſion of the Gall, and there being little or none of it tranſmitted into the Guts, the Excrements will therefore look of a light pale green, as if the Aliment was only waſhed in the Guts.

It is alſo to be obſerv'd, when a Horſe has the Yellows, he turns dull, heavy and ſluggiſh, low in his Spirits, and faint, eſpecially when he is put to the leaſt Exerciſe; and when the Diſtemper has continued ſome Time upon him, he loſes his Appetite, and becomes poor, lean and jaded.

While the Obſtructions are only in the Gall Paſſages, it is eaſy enough to be cur'd; but when the Liver is indured and harden'd near thoſe Paſſages, as it ſometimes falls out; or if there happen Impoſthumations or Ulcers, the Cure will then be very doubtful; for in this laſt Caſe it will have all

the ſame Effects as any other internal waſting Ulcer: And in the other Caſe, where the Liver is ſchirrous and hard, theſe Obſtructions muſt alſo be difficult, becauſe they lie out of the Reach of manual Operation, and alſo of external Applications.

The Cure. But in the Cure, we ſhall begin with its firſt Stage, when we only ſuppoſe the Gall-paſſages obſtructed as above-mention'd; and to remove thoſe, Purging muſt in the firſt Place be neceſſary, with thoſe things that are moderately opening, for unleſs there be Pain and Inflammation in the Liver, Blooding will do but little Service; however it is much in Vogue in ſuch Caſes.

Therefore let the following Infuſion be made, *viz.*

" Take of *Sena* one Ounce, Madder-roots and Turme-
" rick of each half an Ounce, the Leaves of Strawberries,
" Mallows and Marſh-mallows, of each one handful, Salt
" of Tartar three Drams. Let them be infus'd in three
" Pints of boiling Water all Night, and in the Morning let
" it be given with the uſual Precautions. This Infuſion
" will juſt keep the Horſe's Body open, and may therefore
" be repeated four or five Days ſucceſſively.

Or inſtead of this, the Horſe may be purg'd three or four times with an Ounce or ten Drams of the beſt Aloes, and half an Ounce of Turmerick made into a Ball, which to a Horſe of ſmall Value may be done with leſs Trouble.

After Purging in the Manner we have preſcrib'd, the Horſe may have now and then a little ſcalded Bran, and ſometimes boil'd Barley to eat, and his Water may have conſtantly Barley and Liquorice boil'd in it; and a Doſe of the following Powder may be every Day given for a Fortnight or three Weeks together, unleſs the Purging alone remove the Diſtemper, as it ſometimes happens in the Beginning.

" Take of the Roots of Madder and Turmerick, of each
" half a Pound, Earth-worms dry'd in the Sun, or in an O-
" ven that is moderately heated, and Myrrh, of each four
" Ounces, Shavings of Harts-horn or Ivory, and crude Tar-
" tar, of each two Ounces, crude Antimony ſix Ounces, the
" beſt Saffron and Cinnamon, of each two Drams. Let all
theſe be made into a fine Powder, and give your Horſe every Morning two Ounces in a ſufficient quantity of *Venice-treacle* to make it into a ſtiff Paſte, letting him at the ſame time drink a little White-water or Barley-water to waſh it down.

I have been told that the following Receipt ſeldom or never miſſes to carry off the Yellows before it be of an old

ſtand-

ſtanding; and if it ſucceeds, as I have Reaſon to credit my Informant, it is a very eaſy Way of making a Cure.

" Take of *Caſtile* Soap an Ounce, cut it into Slices, " and diſſolve it in two or three Spoonfuls of Whey, or " any other Liquid, after that mix with it two Ounces of " live Honey and Powder of Turmerick, as much as will " make it into two, and after you have dipt them in ſweet " Oil, give them to your Horſe, letting him faſt two " Hours before, and two Hours thereafter.

This muſt be repeated every other Day for a Week at leaſt. But in this Caſe the Uſe of Chewing-Balls, or the champing on green Juniper-wood, Horſe-radiſh, or any ſuch thing that will be of Efficacy to rouze his Spirits, muſt needs be of great Service to him, and he ought alſo to have every Day Exerciſe given him in Proportion to his Strength and Ability; for nothing can conduce more to aſſiſt the Medicines in their Operation.

An inveterate Jaundice.

But when the Yellows proceed from ſtony and hard Obſtructions in the Liver, which, if they be large, may eaſily be diſcover'd, becauſe they will render him liable to Pain and Inflammations, eſpecially upon the leaſt Exerciſe; and you may obſerve him under great Oppreſſion, and he will often turn his Head towards his Right Side. In that Caſe he muſt be bled, and moderately purg'd with the Infuſion above-deſcrib'd; after which the following Fomentation may be uſed.

" Take of the Leaves of Mallows and Marſh-mallows, " of each four handfuls, Wormwood and Camomile, of " each two handfuls, Leaves of Bawm, and Flowers of " Melilot, or ſuch of theſe as can be had, of each one large " handful: Boil them in a Gallon of Water, and add to " it a Pint of Spirit of Wine.

The propereſt Way to uſe this, is by dipping Woollen Cloths into it, applying it pretty warm and often to the Part affected.

If this Symptom does not wear off in a little time, it will ſoon cauſe the Horſe's Death; but if that is removed, and the Horſe ſtill continues yellow, or if the Diſtemper has continued obſtinate and immoveable, notwithſtanding all the proper Means have been uſed, Recourſe muſt then be had to Medicines of a more powerful Efficacy; for which Purpoſe we recommend the following Purge.

" Take of Aloes one Ounce, Myrrh and Turmerick, of " each half an Ounce, *Mercurius dulcis* three Drams, or " half

" half an Ounce of Æthiops Mineral : Make them into " Pills with a ſufficient Quantity of Flour and Butter.

Theſe may be given twice a Week, or according as you find he has Strength to bear them, until he has been ſcoured four or five times; after which Cinnabar Pills, or thoſe for the Farcin, may be given, and their Uſe continued for ſome conſiderable Time (if your Horſe be worth the Expence) but eſpecially if you obſerve him rather to mend than grow worſe. And this Method, when it is rightly follow'd, will be found the moſt rational to remove all obſtinate Diſeaſes of the Liver.

CHAP. XLII.

Of the Diſeaſes of the Reins or Kidneys, &c.

WE find in the Books of Farriers an Account of all the Diſeaſes of the Reins and Bladder, tho' there are but few who have deliver'd them in any regular Order; and, indeed, ſome of them, as the Stone in the Bladder, *&c.* are but ſeldom met with; we ſhall therefore make it our Buſineſs to ſpend as little of the Reader's Time as poſſible, in Things that are common and unprofitable. However, we make no Doubt but ſome rare and unuſual Inſtances of Stones and Slime happen to thoſe Creatures, yet the moſt common are only thoſe that proceed from Coſtiveneſs, from an Inflammation or Ulceration in the Kidneys, or ſome Defect in the Bladder, or in the Urine itſelf; what relates to the Pain or Stoppage of Water cauſed by Coſtiveneſs, has already been diſcuſs'd under that Head; and as it is not to be accounted a Diſeaſe in thoſe Parts, but only a Symptom of another Diſeaſe, and is removed as ſoon as that ceaſes; we ſhall therefore, in the enſuing Chapter, only conſider a Stoppage or Painpiſs in the latter Senſe, when the Diſeaſe is confin'd to the Reins and Paſſages of the Urine.

CHAP. XLIII.

Of the Painpiſs or Strangury.

THO' this Diſeaſe happens moſt frequently when there is an Obſtruction of the Dung harden'd and indurated in the ſtreight Gut, as we have obſerv'd; yet when it proceeds from another Cauſe, it is moſt likely to be occaſion'd either by an Inflammation of the Bladder, or an Ulcer in the Kidneys:

Kidneys ; for when there happens to be an Ulcer in thoſe Parts, the Sharpneſs of the Matter proceeding from thence, may, no doubt, cauſe Pain when it paſſes into the *Urethra*, or Piſs-pipe, by abrading and carrying off the *Mucus* that ſhould defend that ſenſible Part, ſo that a Horſe in this Caſe muſt piſs in Pain ; and as this will alſo cauſe an Inflammation there, inſtead of piſſing freely, he will often dribble.

An Inflammation in thoſe Parts, ariſing from any other Cauſe, as hard Riding, too long a Detention of his Urine, has generally the ſame Effect ; but an Inflammation of this kind happens the more readily, if there be a *Lentor* of the Dung.

The Cure

To remove all ſuch Diſorders, it will be neceſſary to give emollient ſoftning Clyſters made of a Decoction of Mallows, Marſh-mallows, Mercury, Camomile, and the like, with a Mixture of Oils, and other ſlippery things, or Clyſters made of fat Broths ; and to make them a little purgative, common Treacle or Manna may be diſſolv'd in them, to the Quantity of ſix Ounces, or half a Pound.

Half an Ounce of *Sal Prunellæ*, or purify'd Nitre, may be diſſolv'd in his Water for two or three Days together, or two Ounces of crude Tartar may be boil'd in it, and among his Provender may be mix'd the Leaves of Straw-berries, Radiſhes, and Turnip-tops.

But if after hard Riding you have Reaſon to ſuſpect an Inflammation in the Kidneys, the Bladder, or urinary Paſſage, which muſt at the ſame Time be accompanied with feveriſh Symptoms, it will then be very proper to take Blood from the Neck-vein, and the Uſe of the Clyſters may be repeated as often as you ſhall ſee Occaſion ; but if you have Reaſon to fear an Ulcer in the Kidneys, in that Caſe all cleanſing balſamick Medicines are to be comply'd with, for which Purpoſe we chiefly recommend the following Balls.

" Take Gum *Benjamin* half a Pound, clean Antimony in " fine Powder four Ounces, Flour of Brimſtone ſix Ounces, " Seeds of Fenugreek and crude *Opium*, of each an Ounce, " Salt of Tartar two Ounces ; pound theſe in a Mortar, ad- " ding as much Spirit of Turpentine as is ſufficient to make " them into a Maſs ; form them into Balls weighing two " Ounces each, one of which may be given every Morning " an Hour before Watering-time." Or the following :

" Take Turpentine one Pound, boil it in Water till it be " brought to the Conſiſtency of Shoemakers-wax." Give your Horſe the Quantity of a large Walnut dipt in Oil, or moiſtened with Butter, and continue its Uſe for ſome time.

CHAP.

CHAP. XLIV.

Of a Flux of Urine, and ſtaling of Blood.

AN immoderate Flux of Urine happens when the *Serum* of the Blood is too much attenuated and thin, or when the Pores of the Skin are too much conſtringed and ſhut up, or when the Renal Ducts, *viz.* the ſmall Canals that open into the hollow Part or Baſon of the Kidnies, are too much extended and dilated, whereby the *Serum* is ſeparated in an over-great Quantity from the Kidneys.

The firſt, to wit, when the ſerous Parts of the Blood are too much attenuated, is for the moſt Part cauſed by travelling in hot Weather, or eating hot and ſpirituous Herbs, in the Beginning of the Graſs Seaſon; and we have already obſerv'd, that the Pores of the Skin are moſt ordinarily obſtructed and ſhut up by riding in the Night-Fogs, or expoſing a Horſe to the Cold when he has been over-much heated: And the Renal Ducts may be dilated and extended by eating Snow with the Graſs in Winter, which is ſaid to abound very much with Nitre; or it may be cauſed by drinking over-much Water of any Kind, eſpecially when a Horſe is put to hard Exerciſe, for by that Means it ſuddenly precipitates and falls downwards in an over-great Quantity into the Reins, ſo that the above-mentioned Ducts become widened beyond their uſual Dimenſions.

The Cauſe of ſtaling of Blood. After this it will not be difficult to underſtand how a Horſe comes to ſtale Blood, for albeit Blood may ſometimes proceed from an Ulceration of the Kidneys, when they are wore and abraded by Sand or gritty Matter, or by the Acrimony and Sharpneſs of the Corruption that proceeds from the Ulcer; yet the moſt uſual Cauſe of piſſing Blood happens when the Renal Ducts have been over-much diſtended by any of the Cauſes above-mention'd, and Blood, for the moſt Part, follows a too great Profuſion of the Urine, though this is very ſeldom attended unto by Farriers.

The Cure. As to the Cure, whether there be only a too great Profuſion of Urine, or a Flux of Blood, it is to be performed chiefly by Medicines that ſtrengthen and agglutinate, and likewiſe by ſuch things as will divert the Humours another Way by opening the Pores: Only in Caſe of Blood, a Vein ſhould by all Means be open'd in the Neck or Breaſt, to make as ſpeedy a Revulſion

ſion as poſſible, becauſe this Kind of Hemorrhage proves ſometimes fatal to Horſes, and that very ſuddenly.

After Blooding, a cooling Clyſter wherein *Sal Polychreſtum* or *Sal Prunellæ* has been diſſolv'd, will be very convenient. As the following:

" Take of the Decoction of Mallows and Marſh-mallows " two Quarts, diſſolve in it three Ounces of *Sal Polychre-* " *ſtum*, or *Sal Prunellæ*, or Salt-petre, four Ounces of Oil " or freſh Butter". Let it be injected lukewarm.

The following Drench may alſo be given, and repeated for two or three Days.

" Take Plantain-water one Pint, Treacle-water half a " Pint, Japan Earth and Bole, of each two Ounces, Sugar " of Lead ten Grains, Diaſcordium or Mithridate, three " Ounces." Or the following Balls may be given.

" Take Gum Tragacanth and Gum Arabick, of each " four Ounces, dry'd Liquorice, Seeds of Melons and white " Poppies, of each an Ounce, Gourds and Cucumber-ſeeds, " of each half an Ounce, Starch two Ounces: Make them " into a fine Powder, and with a Mucilage of Roots of " Marſh-mallows and Fenugreek-ſeeds; let them be for- " med into Balls weighing two Ounces each.

Let your Horſe have one of theſe Balls Morning and Afternoon an Hour before his Water, until his Urine ceaſes to be bloody.

But if the Flux of Blood be violent, take two Ounces of Salt or Sugar of Lead, and diſſolve it in a Quart of Vinegar or Verjuice, and apply it cold to his Breaſt, and it will ſtop it immediately, unleſs it proceeds from ſome pretty large Branch of an Artery; and in that Caſe, unleſs the Rupture be in the urinary Paſſage, where it may be reach'd by a ſtyptick Injection, it will readily prove mortal.

If your Horſe has got a Fever, his Feeding muſt be but very moderate; if he has no other Accident beſides a Flux of Urine, he may be indulg'd to feed ſomewhat more liberally, and among his Oats may be ſtrew'd the Seeds of Melons, Gourd, or white Poppies; three or four of the Heads of the ſaid Poppies, with the Seeds, may be cut to pieces and boil'd in his Water, which will give it no diſagreeable Taſte: You may alſo give him now and then half a Pint of ſweet Oil; for all thoſe things are very proper, and they will help to blunt the Aſperity and Sharpneſs of the Urine; but Care muſt be taken not to let him drink too much Water, but rather give it him the oftner, unleſs it be ſoften'd in the Manner we have directed.

CHAP.

CHAP. XLV.

Of the Colt-Evil, Shedding of the Seed, and Mattering of the Yard.

The Colt-Evil. THE Colt-Evil is a continued Stiffneſs in a Horſe's Yard, and is ſo called, becauſe it is a Diſeaſe incident to Colts, and is brought upon them by having full Liberty with Mares, while they are not able to cover them; but the Diſeaſe which generally goes under that Denomination in this Kingdom, is no other than a Swelling of the Sheath.

It may be eaſily cur'd in the Beginning, only by Bathing the Sheath with ſome warm Fomentation made of emollient Herbs, *&c.* as Mallows, Marſh-mallows, Wormwood, Camomile, and the like, with the Mixture of Spirit of Wine; but if you find the Swelling pretty hard, and that there are the Signs of Heat and Inflammation, he ought to be both bled and purg'd, and his Yard ty'd up to his Belly, making a Hole in the Bandage for the Paſſage of his Water.

Shedding of Seed. The ſhedding of the Seed, if a Horſe happens to have any ſuch Diſeaſe, may be eaſily known by a Weakneſs and Debility; but that which the Farriers bring under this Denomination, is but ſome Weakneſs of the Reins, occaſion'd by a Strain or violent Exerciſe, or the Solution of a Cold, which is ſometimes follow'd by a Running at the Yard.

But the Cure is the ſame, whether it be Seed, or only Matter from the Reins, and may be perform'd by once or twice purging, and the Uſe of Turpentine Balls, as directed in the 43*d* Chapter; or the Uſe of thoſe ſtrengthening Medicines we have inſerted in the preceeding Chapter.

Mattering of the Yard. The mattering of the Yard proceeds ſometimes from the ſharp froſty Air cauſing an Ulceration, but chiefly when a Horſe has hurt himſelf by being too eager in covering a Mare; for as the Yard is of a looſe and ſpongy Subſtance, if it therefore happens to be bruiſed, it eaſily becomes ſore and ulcerated; and when the Skin is only fretted off from any Part of it, from thence does iſſue a conſiderable Diſcharge of fetid ſtinking Matter, and may be of ill Conſequence, if due Care be not taken, tho' at firſt it may be cured by Blooding only, and bathing the Part with warm Spirit of Wine;

Wine; but the beſt Way in uſing the Spirits, is to take him out of the Stable, for when theſe are apply'd to ſo ſenſible a Part as the Yard, the ſmarting Pain will be apt to make him lame himſelf, unleſs he has Room; but that does not laſt above a Minute.

If the Ulcer or Excoriation be inwards, which can only be diſtinguiſh'd by the Matter proceeding from the Urinary Paſſage, and not from the Pain in piſſing, as the Farriers ſuppoſe, from the leaſt Sore upwards, as it is more or leſs accompanied with Inflammation, will exhibit the ſame Signs as the Urine paſſes through the inflam'd Part. In that Caſe the following Mixture may be injected three or four times a Day, and it will ſoon cure him of that Symptom.

" Take a Pint of Plaintain or Roſe-water, *Venice* Tur-
" pentine two Ounces, the Yolk of one Egg, Honey one
" Ounce; mix theſe together in a Mortar, then pour the
" Water on them by Degrees until they are incorporated."

After which add four Ounces of Spirit of Wine, or Brandy, wherein half a Dram of Camphire has been diſſolv'd. Put the whole Mixture into a Vial, ſhaking it as often as you you have Occaſion to uſe it.

CHAP. XLVI.

Of the Dropſy.

ALL our *Engliſh* Authors, and ſome *Italians*, have enumerated a Dropſy among the Diſeaſes of Horſes, and ſome affirm poſitively, that they have cur'd it in all its different Kinds; but that which chiefly happens to Horſes, is what the Farriers call the *Univerſal Dropſy*, and ſhews itſelf more or leſs, in all the external Parts of the Body, but eſpecially the Legs and Thighs, as they are the moſt dependent; and I have myſelf obſerv'd in Caſes of the Greaſe, when that happens both before and behind, it generally proceeds from a Dropſical Diſpoſition.

The Cauſe of a Dropſy.

The Cauſe is from all Kinds of ill Uſage, but eſpecially from Bleeding and Purging Horſes beyond their Strength; for theſe unſeaſonable Evacuations render the Blood languid and ſlow in its Motion, and for Want of Spirits, it has not Force enough to reach the Paſſages of the Skin, ſo as to make the uſual Diſcharge, but its ſerous Parts burſt through the ſmall Veſſels, and are depoſited under the Skin or the fleſhy Pannicle.

The

The Signs are, a Laſſitude and Wearineſs, Faintneſs and Difficulty of Breathing, Loſs of Appetite, and a Change of a Horſe's natural Colour from bay to dun, or from black to a duskiſhneſs, and from white to an aſhy Complexion, and the like; his Hair will ſhed with the leaſt rubbing, and the Pits of your Fingers will remain where ever there is a Swelling. It is moreover to be obſerv'd, when a dropſical Horſe lies down, he does not gather his Limbs round together as a Horſe that is free from that Indiſpoſition, but becauſe of their Stiffneſs ſpreads them out at their full Length.

The Cure. Altho' Purging to Exceſs is ſometimes the Cauſe of this Diſtemper, by reaſon it diveſts the Blood of its ſpirituous and balſamick Parts; yet to attenuate the Viſcidities of its *Serum*, and to make a Diſcharge of what is ſuperfluous, Purging muſt again be made uſe of; and when that is perform'd with proper Medicines, it is of no ſmall Moment in the Cure; but theſe muſt be ſuch, as beſides their purging Quality, are endu'd ſo as to communicate Warmth and Vigour to the Blood, *&c.* for which Purpoſe the following is chiefly to be prefer'd.

" Take of Jalap one Ounce and a half, Gamboge two " Drams, Seeds of Dwarf-elder two Ounces, Ginger and " Nutmegs, of each half an Ounce. Make all theſe into a " fine Powder, and form them into two Balls, with as much " Turpentine as is ſufficient for that Purpoſe." Let theſe be dipt in Oil and given with the uſual Precautions. They muſt be repeated every other Day for a Fortnight or longer; and on thoſe Days he does not purge, an Ounce, or ſix Drams of Antimony may be given him.

And becauſe Sweating is alſo of the greateſt Service, when it can be promoted, the following Doſe may be given, and repeated as often as there is Occaſion.

" Take old *Venice*-Treacle four Ounces, *Matthews*'s " Pill two Drams, Camphire, and Salt of Harts-horn, of " each fifteen Grains." Mix theſe well together, and give them in a Quart of hot Ale.

But if this proves inſufficient to raiſe a Sweat, he may be cover'd in a Dunghill.

Some particular Regard is alſo to be had to a Horſe's Diet in this Caſe; for altho' it would be inconvenient to feed him high, yet while he undergoes ſo much Cleanſing by Purging, Sweat, and other Evacuations, his Aliment ſhould be ſomewhat proportion'd to it; and therefore he may be allow'd a large Meaſure of clean Oats every Day after

after the Operation of his Phyſick, with an Ounce of the Seeds of Dwarf-elder, and two Ounces of Caraway-ſeeds ſtrewed among them.

CHAP. XLVII.

Of a Horſe that is Hide-bound.

Various Ways whereby a Horſe becomes Hide-bound.

WHEN a Horſe, after Travel, or after any Accident, grows ſo lean, and his Fleſh ſo much ſunk, that his Skin adheres cloſe to his Bones, he is then ſaid to be Hide-bound; but this is not properly to be term'd a Diſeaſe, while it may be made up by Feeding; but when a Horſe, after good Keeping, continues in the ſame Condition, we may then very reaſonably ſuppoſe him to lie under ſome inward Indiſpoſition; and in this Reſpect it may proceed from divers Cauſes, as when the Excrements by Dung and Urine are over-much enlarg'd, and the Pores of the Skin obſtructed; or when the Entrance into the lacteal or milky Veſſels are ſtuffed by adheſive gluey Matter, or from any other augmented Secretion, or any large Diſcharge, whereby ſuch a Derivation is made as hinders the Blood from reaching the extreme and outward Parts, for by that Means the Veſſels and muſcular Fibres become contracted, and ſhrink to the Bones, for Want of their due Nouriſhment; and as the Juices in thoſe Parts become alſo viſcid, the Skin is thereby as it were glued to the ſubjacent Fleſh.

What Diſtinctions are to be made with reſpect to Hide-bound Horſes.

And therefore to form a right Judgment of this Diſtemper, the Farrier ought to examine carefully both into the Quantity and Quality of what a Horſe voids from him, for I have known a hide-bound Horſe ſhit often, and his Excrement ſoft like that of a Cow, and yet not come directly to a Lax or Looſeneſs; and I knew another very coſtive, but then he had a beginning Glanders, which was the Cauſe of his Diſtemper; though in the Proceſs of the Diſeaſe that the Matter came more plentifully, his Skin grew very looſe and thin, which is eaſy to be accounted for; and a Horſe may, no doubt, alſo become hide-bound from the other Cauſes above-mentioned.

And ſince this is properly an Effect of ſome other Diſeaſe, therefore whatever cures that, when it is once found out, will ſoon

ſoon looſen a Horſe's Hide; as for Inſtance, when a Horſe voids too much Dung, a Stop is put thereunto with proper Remedies, which aſtringe and dry up the Belly; or when a Horſe ſtales too much, or if the Paſſages of the Chyle are obſtructed, whatever carries off the Obſtructions, or puts a Stop to the ſuperfluous Evacuation, will cauſe the Blood to flow in greater Quantity into its proper Veſſels, by which Means the ſhrunk and depreſs'd Fibres will by Degrees be extended to their uſual Dimenſions. But if the Farrier be at a Loſs to judge rightly in thoſe Caſes, he can hardly do amiſs if he adminiſter the ſame Remedies we have laid down for the Cure of the Yellows, for there are but few Hide-bound Horſes which they will not recover, unleſs there be an inward Decay and Waſte.

But while proper Means are us'd inwardly, beſides good Dreſſing, Fomentations may be us'd outwardly, ſuch as are recommended by *Solleyſell*, made of Succory, Harts-tongue, Agrimony, St. *John*'s Wort, Bay-leaves, Bawm, Mint, Pennyroyal, Rue, Sage, Roſemary, Thyme, the Roots of Graſs, Madder, Eringo, or ſuch of them as can eaſily be had: Let twelve Handfuls be boil'd in two Gallons of Water, or Lees of Wine, and taking as many of the Ingredients in your Hand as you can graſp, rub all his Body with it as hot as he is able to bear; after which take Ointment of Marſh-mallows, and Oil of Rue, of each equal Parts; with theſe chafe his Belly, and all about his Throat and Jaws, or where-ever the Hide is much ſhrunk, then cover him with an old Sheet dipt in the Liquor, being firſt wrung out, binding over all a warm Quilt or Rug.

This may be repeated for the Space of three or four Days; and, as that Author rightly obſerves, it will help to draw the Spirits and Nouriſhment to the dry Skin, tho' it will do but little Service, unleſs the inward Obſtructions be alſo remov'd.

How a lean Horſe is to be managed.

But as for a tired lean Horſe, who has no inward Indiſpoſition, I would never adviſe any one to tamper with him, otherwiſe than by obſerving a due Care in his Feeding, Dreſſing, and Exerciſe; and in this Caſe, while we only ſuppoſe a Horſe's Body ſhrunk and depreſs'd by the continual Diſcharges from the Pores of the Skin, and the other Excretions, during his daily and continued Labour, and the Want of ſufficient Food to make up thoſe Loſſes, it is very certain theſe may be repair'd by Food and Eaſe.

But

But as in this Caſe the Veſſels are contracted and leſſen'd in their Bore and Capacity, his Food ought at firſt to be but moderate, otherwiſe a larger Quantity of Blood will be tranſmitted into thoſe Veſſels, than they are capable at once to receive, which muſt needs be the Occaſion of many Diſorders, as it will cauſe an Over-plenitude in the extreme Parts, and ſo, by its Redundancy, over burden and load the principal Bowels.

And this is truly the Reaſon why lean and tired Horſes, who have been ſuddenly fatten'd by Jockeys, become ſuch Jades, turn broken-winded, or lame, or loſe their Eye-ſight upon the leaſt Service; for while the main Study of thoſe Perſons is (as every one ſufficiently knows) only to make them look fat and plump, they ſoften all their Food, that it may digeſt ſoon, and turn the ſooner to Blood, and allow them no Manner of Exerciſe, being ſenſible that any ſuch Method would ſoon turn to their own Detriment.

But to apply this more particularly to our preſent Purpoſe; a lean Horſe ſhould have his Exerciſe and Food increas'd by degrees, and juſtly proportion'd to the Augmentation of his Strength; and becauſe of the Contraction and Want of Capacity, which we have obſerv'd to be in the Blood-veſſels of ſuch Horſes, his Exerciſe ſhould always be given him ſo as he may reſt ſome time before he has his Feeding of Oats; becauſe Exerciſe, by thinning the Blood, and making it take up more Space in the Canals, may therefore, beſides other Injuries to which it expoſes a lean hide-bound Horſe, cauſe a more than ordinary Senſe of Fullneſs, by diſtending the Blood-veſſels of the Stomach, which are in that Part very ſmall, and therefore hurt Digeſtion; whereas if he be ſuffer'd to ſtand ſome time before an empty Rack, or only to eat a little freſh Hay until the additional Motion of the Blood be decreas'd, and the Veſſels become ſubſided by a gradual running off of the Blood, a Horſe will then become lightſome, and able to digeſt his Food, ſo as it may be converted to true and ſolid Nouriſhment.

And for the ſame Reaſons a Horſe in this Condition ought never to be taken out ſoon after Feeding, but upon Neceſſity, and then he ſhould only be walk'd gently, as every Meal makes a freſh Augmentation of the Blood; and indeed, at all times his Exerciſe ſhould be gentle and eaſy, until his Veſſels are render'd capacious, and ſtrong enough to bear the ſudden Sallies of the Blood, and that the Office of Secretion have alſo acquir'd a ſufficient Aptitude to

make their Discharges as regular, and as nearly proportionable as may be to the Quantity of his Food.

And this must certainly be the true Reason of fattening and hardening a lean hide-bound Horse, or in other Words, of bringing a lean Horse into good Case, and at the same time rendering him robust and strong, and able to bear the hardest Labour and Toil, especially if to this be added good Rubbing and Dressing, to promote the Discharges of the Skin.

But notwithstanding these Rules are what we can warrant to be sufficiently agreeable to the Laws of Mechanism in all Bodies whatsoever, yet because the animal System is so much complicated, whereby one Horse also differs vastly from another, every Man's own Discretion must therefore, in the main, guide him as to Particulars. What we have here observed in general, has been chiefly calculated with an Eye to those Horses that are of a tender and delicate Frame, and not to such as are naturally hardy, though these may also, in some Circumstances, require such a Care to be had of them. But the Reader may consult the Fourth Chapter, where he will meet with some things that bear a near Affinity to the present Subject.

CHAP XLVIII.

Of the Farcin.

THERE is no Distemper which has try'd the Skill and Invention of Farriers more than the Farcin. The Writers of the lower Rank, as *Markham*, and *De Grey*, and those who have borrow'd all their Knowledge from them, have no otherwise accounted for it, than that it proceeds from naughty and corrupt Blood, and that it is the most loathsome and infectious of all Distempers, brought upon a Horse by Infection, or by eating corrupt and naughty Food, or by lying in Swines Litter, and from such like Causes. Neither have those of better Account mended the Matter very much, having only amus'd their Readers with a false and unintelligible Philosophy.

The Sieur *de Solleysell* defines it to be an Ulcer caused by the Corruption of the Blood, and that by a certain Poison which is more or less malignant, and consequently makes the Horse's Condition either hopeful, or altogether desperate; and after a short Theory built upon the Writings

ings of ſome Phyſicians, but no Ways applicable to the Farcin; he has theſe Words:

Solleyſell's Account of the Farcin no ways agreeable to the Nature of that Diſeaſe.

" For a brief Explanation of the Nature " of that Poiſon, 'twill be ſufficient to tell " you, that it is a venomous Steam, or cer- " tain corrupt Spirits, which penetrate the " Parts of a Horſe's Body, as the Light of " the Sun paſſes through a Glaſs. Theſe " Spirits are a Sort of Ferment, that breed Corruption in " whatever Part they attack.

But this Explanation is not only imperfect, but altogether unintelligible, his Compariſon being no ways agreeable to his own Ideas and Notions of that Poiſon; nor indeed deducible from thoſe Cauſes which himſelf has enumerated as the chief Occaſion of the Farcin; for he obſerves that the Farcin is ſometimes communicated by Contagion from an infected Horſe, the eating too great a quantity of new Oats, or new Hay, violent Exerciſe in hot Weather, and even once hard Riding; Hurts and Wounds made by a foul cancerous Inſtrument, ſuch as Spurs, Bits, *&c.* the too great Abundance of Blood, and a prepoſterous and too haſty Diligence in fattening tir'd, lean, and over-heated Horſes.

But it is very certain none of theſe Cauſes will produce ſuch a Poiſon as can penetrate the Parts of a Horſe's Body in the Manner he has deſcrib'd; and indeed, thoſe Poiſons that are of the moſt volatile and corroſive Nature, tho' their Effects are ſudden, yet their Operations are not fortuitous or at Random, but perfectly mechanical, as may be ſeen by any one who is able to peruſe Dr. *Mead*'s Eſſays on Poiſon, where all thoſe things are clearly and intelligibly explain'd.

We ſhall therefore endeavour to account for the Farcin in a Way that we hope will be thought more rational than what any of our Authors have hitherto advanc'd, and whatever Regard be had to the *Procatartick*, or remote Cauſes of that Diſtemper, we may venture to affirm, that its immediate Cauſe is a languid and heavy Motion of the Blood, and other Juices contain'd in the ſmall Veſſels of the extreme and outward Parts of a Horſe's Body, and that it has its chief Seat in the Skin and fleſhy Pannicle. But before we proceed further, we ſhall take Notice, that moſt Authors have divided the Farcin into divers Kinds, *viz.* the wet, the dry, the inward and the flying Farcin, the corded Farcin, the Farcin that puts forth red or yellowiſh Fleſh, and that which is of a livid and black Colour, and reſembles a Hen's Fundament.

The wet and the dry only differ as there is more or leſs Moiſture in the Ulcers and Parts where it is ſeated, the flying Farcin, which makes its Appearance ſometimes in one Place, ſometimes in another; and the inward Farcin, which is ſaid only to be felt on the Breaſt, but does not elevate the Skin, and is obſerved often to diſappear of a ſudden, and become the immediate Cauſe of Sickneſs, though either of theſe may degenerate to a true Farcin, yet while they are not fix'd, but indu'd with Properties altogether foreign to the Farcin, they cannot rightly be brought under that Denomination, but ought rather to be look'd upon as reſembling thoſe Eruptions on the human Body, which happens in violent Colds, or malignant Diſorders, and are curable as ſuch. All the other Kinds are only different Effects of that which makes its firſt Appearance like a knotted Cord; and it is this Sort alone, which, properly ſpeaking, conſtitutes a true Farcin. In what Manner ſuch a Diſorder can happen to a Horſe, and produce thoſe Effects we daily obſerve from it, ſhall be ſhewn anon.

We have already taken notice that the Farcin has its chief Seat in the Skin and thin muſcular Pannicle, which lies under it, and is cauſed when the Juices in thoſe Parts are become viſcid, and conſequently ſlow and languid in their Motion. If it be conſider'd that there is an infinite Number of Veſſels in hoſe Parts that are ſmaller than Hairs; and that thoſe Veſſels, however ſmall, have a Capacity, and contain a Fluid within them, any one may eaſily imagine, that in the beſt Eſtate a Horſe can be in, that Fluid can move but very ſlowly; but when it happens to be too thick, or viſcid, it may be then eaſily reduc'd to a State of Stagnation; and when it is deny'd a free Paſſage thro' thoſe ſmall Canals, as it is conſtantly preſs'd upon it by the ſucceeding Fluid, thoſe ſmall Veſſels, where there is a Stagnation, will be ſtretched out beyond their uſual Dimenſions, and the Part will be elevated and raiſed into a Tumour.

As often as any Part is thus elevated, and the Liquid ſtopt that it cannot move forwards, becauſe of the Obſtructions and the Compreſſions there is on all Sides, the Veſſels being thereby fill'd beyond their Capacity, it burſts forth; and being now got without the Laws of Circulation, putrifies, and acquiring a corroſive malignant quality, it gnaws and feſters, until it has form'd a convenient Lodgment for itſelf.

If the Stagnation be ſudden and violent, and accompanied with great Pain and Heat, it will cauſe ſo great a Derivation of Blood towards the inflam'd Part, that the ſubjacent

Muſcles

Muſcles will alſo be affected, and by that Means the Part will be rais'd into a large Boil and Impoſthumation: But when the Pain and Heat is moderate, it will probably pierce no deeper than the Pannicle, and as the ſubjacent Muſcles are but little, if at all affected, the Tumors will be but ſmall, and proportionable to the Veſſels of the ſame Pannicle. And becauſe the Irritation made by thoſe Knots or little Tumors is not of Violence to affect and attract the Blood in the larger Veſſels; yet as there is a near Sympathy and ſtrict Communication, at leaſt, between all the adjacent Parts of the Pannicle, any the leaſt Irritation will eaſily affect thoſe that are neareſt, and the Malady will be communicated by degrees from one part to another, until it ſpread over the whole Body. Becauſe of the Cloſeneſs of the Skin to the Pannicle, and the Communication there is between them, the Hide muſt alſo be affected; yet that Intimacy and Cloſeneſs is the Cauſe, in ſo gentle an Inflammation, that theſe Knots do not riſe equally in all Parts, but chiefly follow the Tract of the Veins; the Humour therefore has a greater Tendency towards the Veins, as it finds a Lodgment under them while they are full, and elevate the Skin; and moreover, as the Veins (being only fill'd with a Liquid) are therefore ſoft and yielding, and may be much eaſier preſs'd upon than the ſuperior Skin, which is more hard and compact; and it is from hence that a Cord is always form'd by the Humours along the Tract of the Vein; and as the Swelling increaſes, it gathers Strength, and ſometimes ſurmounts the Vein itſelf, ſo that the Vein ſeems to lie under it.

We have ſhewn how the Humours thus obſtructed turn to Matter: But the Matter of the Farcin is generally ſmall in quantity, as the Knots are form'd in Parts that are dry and aduſt, and where there is but little Moiſture; and as the Veſſels which nouriſh it are alſo but ſmall; and for this Cauſe, when the Cure happens to be ill manag'd, the Ulcers degenerate into a *Caries*, and puts forth a Sort of Fleſh which is red, white, or yellowiſh, according to the Predominancy of the Humours, or elſe turn hard and ſchirrous, and of liquid Colour: and when the Lips of the Ulcers become inverted, which happens frequently from the Acrimony and Sharpneſs of the Matter, or the frequent Application of hot or unctuous things, they are then ſaid to reſemble a Hen's Fundament.

But all this is reconcileable to what we have laid down as the immediate Cauſe of the Farcin, to wit, a Lentor in the

Blood and Juices, whereby they move heavily ; but eſpecially in the extreme and outward Parts, where the Veſſels are the ſmalleſt ; and it is very certain, that any, or moſt of thoſe Cauſes, to which *Solleyſell*, and the beſt Farriers have aſcrib'd the Farcin, will produce ſuch a Lentor and Slowneſs ; or if there be a previous Lentor in the Blood, muſt increaſe that Lentor, either in whole or in part, by exciting Pain. And this is plain from the Inſtance of the Farcin being cauſed by the Wound of a ruſty Spur, which can act no otherwiſe as a Poiſon, than that ſome of the harſh and pointed Parts of the Ruſt, fret and irritate the tender wounded Pannicle ; and even then it muſt act mechanically, and in the Way we have above deſcrib'd, by retarding the Motion of the Juices in thoſe Parts ; and if, previous to ſuch a Wound, there be a very great Viſcidity and Thickneſs of the Juices, the Farcin may be cauſed by the Wound of a Spur, or any other Inſtrument, tho' it be altogether free from Ruſt.

If the Farcin be cauſed by Infection from another Horſe, it muſt act in the ſame Manner, for then we muſt ſuppoſe that ſome *Effluvia*, or poiſonable Steams, fly off from the diſeaſed Horſe, which, by inſinuating themſelves into the Pores of a ſound Horſe, muſt occaſion a Stagnation of the Juices in thoſe outward Parts, but theſe *Effluvia* are not of ſo volatile a Nature as to have often ſuch Effects; but when Horſes ſtand together in a Stable, it is rather to be attributed to their eating the ſame kind of Food, and their being under the ſame Direction and Miſmanagement. What kind of Poiſon may be in Swines Litter, or how far it may be noxious to Horſes, is not worth while here to determine, ſince it is very ſeldom made uſe of to Horſes ; and if it was, it would rather produce the Mange than the Farcin.

The eating of corrupt and unwholſome Hay or Oats, may eaſily cauſe the Farcin, as ſuch Feeding begets Crudities, which muſt render the Blood viſcid ; for when the Blood has once acquir'd that Quality, a Stagnation may be eaſily induc'd in the extreme and outward Parts, where the Juices are naturally viſcid, and the Veſſels extremely ſmall.

Too much Feeding, without ſuitable Exerciſe, may alſo be the Cauſe of a Farcin, as it may induce a gradual *Plethora*, or Fulneſs of the Veſſels ; but if that be ſudden, by a ſudden Adſtriction of the Pores, it will be more apt to cauſe a Fever or Surfeit, or a Foundring in the Body, which in many Caſes is not to be diſtinguiſh'd from a Surfeit :

Surfeit: And the ſame Effects may alſo be produc'd from Travel, or from once hard Riding, and from many other Errors in the keeping and Management of Horſes.

It now remains that we take Notice of the Signs; but becauſe theſe are manifeſt and known to all, we ſhall only diſtinguiſh between thoſe that are ſaid to be good Signs, and thoſe which are of ill Prognoſtication.

Firſt of all then, That kind of Farcin is ſaid to be eaſily cur'd, which takes its Riſe upon the Head and upper Parts; the Reaſon is, becauſe it can have no deep Root; but if it once come to affect the Emunctories or Kernels about the Jaws, and towards the Ears, it is then to be feared, and if neglected, will be apt to breed the Glanders.

That kind of Farcin which is ſuperficial, and where the Hide is only affected, cannot be of dangerous Conſequence, even though it be univerſal, and has overſpread the whole Body; but when it has been originally ſeated in the Pannicle, or if it be obſerved to grow deeper, and affect the Pannicle, it may be then look'd upon as more difficult and obſtinate, tho' even then it will not be very hard to remove it, unleſs it either affect the glandulous and kernelly Parts, or that the Knots break, and degenerate into a *Caries* or *Schirrous*.

But the moſt ſuperficial and leaſt rooted Farcin, if it continue long without Abatement, may inſenſibly, and by Degrees, become of ill Conſequence, as it diſturbs the Offices of Secretion, for while the Humours have a continual tendency towards the Knots and Sores, the Pores of the Skin become obſtructed, and for Want of a due and regular Diſcharge there, the leaſt Error in Feeding and Exerciſe will cauſe inward Diſorders, wherefore we may often obſerve Horſes that have the Farcin turn alſo broken-winded and conſumptive, and ſometimes become liable to the Yellows, and to many other Infirmities, which either render them altogether incurable, or at leaſt make the Cure very difficult.

When the Farcin begins on the extreme and moſt dependent Parts; or if in the Proceſs of the Diſeaſe, the Humours fall downwards upon the Limbs, it is in that Caſe very difficult to be remov'd, as it is generally attended with the Greaſe, but the Reaſon will be ſhewn in the Theory of that Diſtemper; and a competent Knowledge of the Structure and Mechaniſm of a Horſe, will eaſily enable any one to diſtinguiſh in other Circumſtances. We ſhall therefore haſten to the Cure.

And herein the Farrier ought, in the firſt place, to look unto the State and Condition of the Horſe, for if he be fat and

luſty when the Diſtemper ſeizes him, in that Caſe his Diet ſhould be ſomewhat abated; but if it be otherwiſe, that the Horſe is lean and out of heart, and that he has not had ſufficient Nouriſhment, or that his Labour has been beyond his Strength and Feeding, his Diet ought then to be ſomewhat augmented; for as too great a Plenitude and Fulneſs of the Veſſels is oftentimes the Occaſion of that Lentor and Slowneſs of the Juices which bring on a Farcin, the ſame Effects are oftentimes produc'd by Poorneſs; becauſe in that Caſe, the Blood being diveſted of its Spirits, becomes languid and ſluggiſh, and conſequently is render'd the more apt to Obſtruction in the extreme Parts, where the Veſſels are the ſmalleſt, as we have taken Notice in another Place.

And therefore it will appear to be founded alſo upon Reaſon, what *Solleyſell* ſays he has experienc'd from frequent Trials and Obſervation, that Purging is of no great Service, but oftentimes a Detriment to Horſes in the Farcin. This is ſo plain in Caſe of a Horſe that is low in Fleſh, that it needs no Manner of Proof, and can only be admitted of in ſuch Circumſtances as make it unavoidable, when there happens to be an extreme Coſtiveneſs, and then laxative Clyſters are the moſt eligible; but on the other hand, when a Horſe is fat and full-body'd, though Purging muſt in that Caſe do him leſs hurt, and may be comply'd with in Moderation, yet it is no ways ſuited to make a perfect Cure of the Farcin, but has been the Ruin of many Horſes, in the Hands of ignorant Smiths, who know no other way of carrying off Diſeaſes but by repeated Purgations, the Diſcharges made that Way being the moſt apparent to the outward Senſes, and the moſt agreeable to thoſe who are able to frame no other Ideas of a diſeaſed Horſe, than by imagining his Blood to be full of Corruption, and that the Medicines they uſe have ſome elective Property to drain that off with the Dung.

But a more warrantable Experience has ſufficiently taught us, that in all Purgations the good muſt be drain'd away with the bad, and are therefore ſeldom profitable, but rather hurtful in Foulneſſes of the Skin and outward Parts; but thoſe things can only be ſucceſsful which work more immediately upon the Blood and Humours, by changing the Contexture, and rendering them thin enough, ſo as their excrementitious Parts may go off by the neareſt and propereſt Outlets. And it is plainly evident, the Medicines hitherto found the moſt effectual for the Cure of the Farcin, have been endu'd with ſuch Properties.

But

The Cure of the Farcin.

But that we may proceed methodically, if a Horſe be plethorick and full-body'd, ſuch a Habit may doubtleſs be an Incumberance to Nature, in which Caſe there will be Pain and Inflammation in the Knots and Tumors, and yet the Matter may not be rightly diſpoſed to come to a laudable Digeſtion; when theſe Symptoms are obſervable, the Cure may be begun by taking a ſmall Quantity of Blood from the Neck, but that ought not to be repeated, unleſs ſome urgent Circumſtance ſhould require it.

After Blooding, moderate Purging may be once or twice complied with, eſpecially when one or other of the following Preſcriptions, which we have in a more particular Manner ſuited to the Nature of the Farcin.

" Take Aloes in Powder, and Myrrh, of each an Ounce,
" Diaphoretick Antimony half an Ounce, *Jamaica* Pep-
" per two Drams. Make them into Balls with a ſufficient
" Quantity of Flour and Honey.

This is ſo mild, that it may be given almoſt to any Horſe; the following is ſomewhat ſtronger.

" Take Aloes two Ounces, Salt of Tartar two Drams,
" Gum Guaiacum, and Æthiops mineral, of each half an
" Ounce; make them into Balls as the former.

No purging Medicine can be better ſuited to the Nature of the Farcin: But if it ſhould be required ſtronger, as it may be to ſome very robuſt Horſes, then the following may be given.

" Take the *Pulvis Cornachini*, otherwiſe called the
" Counteſs of *Warwick*'s Powder, an Ounce and a half,
" or two Ounces, Æthiops mineral one Ounce: Make
" them up as the former into one or two Balls.

Either of theſe may be given, according to the Strength and Ability of the Horſe, obſerving always that he drink nothing but White-water warm'd, until the Phyſick is quite gone out of his Body; which, if he be purg'd three times, will be about a Week or ten Days after the firſt Doſe.

If upon this you obſerve the Knots and little Tumors ripen well, you need only give the Horſe half an Ounce of *Venice*-Treacle, or Mithridate, or an Ounce of *London*-Treacle, twice a Day, in a Pint of Ale or White-wine; and this may be repeated every Day until the Matter is all diſcharg'd; or if they terminate in dry horny Excreſcences, like Warts, which ſometimes happens, it may be repeated after the worſt Symptoms are over, *viz.* the

Swel-

Swelling and Inflammation about the Roots, every other Day only; and when the Skin becomes ſo well fortified, and the Excreſcences ſo much diſengag'd from it, that they begin to fall off in the Dreſſing, or that you can bring them off with your Nails without hurting him, you may then leave off the Uſe of Medicines, and put a Period to the the Cure, by giving your Horſe due Exerciſe.

But if the Obſtructions be of long ſtanding, and that there is a very ill Diſpoſition in all thoſe Parts where the Diſtemper is ſeated, and that the Sores and Ulcers begin to have a bad Tendency, then Recourſe muſt be had to thoſe Medicines which are endu'd with the Qualities we have above-mention'd; and firſt of all we ſhall begin with ſuch as are the moſt ſimple and eaſy to be had.

And here it will be proper to obſerve, that Antimony given to a Horſe among his Corn, will ſometimes cure the Farcin; and I have known ſeveral Inſtances of it, tho' I have known it alſo prove ſeveral times unſucceſsful; but that may not be the Fault of the Medicine, but the Keeper, who ought, while the Horſe is under a Courſe of Antimony, to give him daily, but moderate Exerciſe, and likewiſe moderate Feeding.

Therefore when you give your Horſe Antimony for the Farcin, let the Doſe be two Ounces, which may be mingled with his Oats; and about an Hour thereafter let him be walked abroad for the Space of an Hour more, or an Hour and a half; let him be very well rubb'd when he is brought into the Stable; but the Comb muſt be ſparingly uſed to a Horſe that has the Farcin upon him, becauſe of rankling the Sores; after his Dreſſing, cloathe him moderately warm.

If the Antimony opens his Belly, it will then loſe much of its Virtue, and the Horſe will become weak; in that Caſe you may give it in Balls made of *Venice*-Treacle, or *London*-Treacle, with a ſmall Quantity of Flour, to bring the Mixture into a fit Conſiſtency; continue to give it in this Manner till the Looſeneſs abates.

If it be froſty Weather, his Water ſhould be ſometimes warm'd and ſtrew'd with Oatmeal; or at leaſt, it ought to be ſet ſome time before the Fire, becauſe exceſſive cold Water will be apt to chill the Body of a Horſe, which is kept in a more than ordinary Heat during the Operation of the Antimony. But Antimony may be given more properly in the following Manner;

" Take

" Take crude Antimony half a Pound, Quickſilver four " Ounces, Flour of Brimſtone two Ounces: Rub theſe " two or three Hours in an Iron Mortar, until they are re- " duc'd into an impalpable black Powder; then take of " the Raſpings of Guaiacum Wood ſix Ounces, Zedoary " and Galangal, of each two Ounces, Bay-berries, Juniper- " berries, Coriander-ſeeds and Caraway-ſeeds, of each an " Ounce." Make all theſe into a fine Powder, and mix them in a Mortar with the black Powder.

Two Ounces of this Powder made up into a Ball or Paſte, with a ſufficient quantity of Honey, and given every Day to your Horſe, will ſoon cure him of the moſt inveterate Farcin, unleſs any uncommon Accident ſhould happen, or that the Horſe be broken-winded, or labours under ſome other inward Imperfection.

The following Drink may alſo be given againſt the Farcin with very good Succeſs, but then it is not once or twice will do the Buſineſs, but it muſt be continued a conſiderable Time.

" Take of Guaiacum-wood one Pound, Saſſafras and Box- " wood, of each half a Pound, the Bark of Walnut-tree, " and the Roots of ſharp-pointed Dock, of each four Oun- " ces, Hog-lice tied in a linnen Bag, as many as will fill a " Pint Porringer, Liquorice ſliced four Ounces. Let all theſe " be put into ſix Gallons of new Wort, the Woods and " Bark being firſt raſp'd, and when it has done working, " give your Horſe a Quart of the Liquor every Morning, " and the ſame quantity towards the Evening, or oftener.

I have ſeen a great many Receipts which have been ſomewhat of the ſame Nature for the Cure of the Farcin, but the Owners of them, for the moſt part, boil'd the Ingredients in Ale or Beer, and gave it once or twice; and if the Drink did not anſwer their End, they were then greatly diſappointed; but as all thoſe Things have their Operation chiefly in the Glands and ſmall Veſſels, a conſiderable Time muſt be allowed before their Efficacy be much felt, and if they anſwer their End in two or three Months, it is as much as can be expected from them.

Solleyſell recommends the Uſe of Guaiacum, Saſſafras, and Sarſaparilla, two Ounces of each, made into a groſs Powder for three Doſes, which (he ſays) is a Specifick, which, by a continued Uſe, infallibly cures the Farcin. The Roots of Solomon's Seal, white Mulein, and Queen of the Meadows, ſtand alſo recommended by him for the ſame

Purpoſe;

Purpoſe; but any of all theſe muſt come far ſhort of our firſt Preſcription, and likewiſe of the following, which we are aſſured will root out the Cauſe of any Farcin that is not complicated in the Manner we have above-mention'd.

" Take native Cinnabar one Pound, Gum Guaiacum " half a Pound; or, inſtead of that, to a Horſe of ſmall " Value, the ſame Quantity of Guaiacum-wood raſp'd, " Zedoary and Galangal, of each two Ounces, Diaphore- " tick Antimony four Ounces." Make all theſe into a fine Powder, and put it up in a cover'd Gallipot.

Two Ounces of this Powder may be ſometimes given in Honey, and ſometimes in *Venice*-Treacle, or Mithridate, made into a ſtiff Paſte, and thrown down like a Ball, repeating the Doſe every Day; neither will there be Occaſion of keeping the Horſe Bridled, and reſtraining him three or four Hours from Feeding, for this muſt digeſt with his Food, and might be given him among his Oats if he would gather it up clean.

Native Cinnabar, its Virtue. The *Cinnabar*, which is the Baſis of this Medicine, is a natural Compound of Quick-ſilver, and ſome very fine Sulphurs, which render its Operation as mild and eaſy as it is truly efficacious; and there is no Horſe, let him be of never ſo delicate and waſhy a Conſtitution, but may take it with all the Safety imaginable, and it will be ſo far from hurting him, that he will mend and grow ſtrong upon it.

The *Cinnabar* of *Antimony* is alſo a very good Medicine, and will have near the ſame Effect as the other, but it is dearer; the *Fictitious Cinnabar* is likewiſe uſeful in the Farcin, but the *Native* is much the beſt, and may be diſtinguiſhed from the *Fictitious* by its beautiful red Colour, being more ſplendid and ſhining than that which is made by the Chymiſts.

There are infinite Remedies to be met with in the Books of Farriers, many of which are affirm'd to cure the Farcin infallibly: But as there are but few of them which are not over-loaded with a Number of uſeleſs Ingredients; and as thoſe of them which are the moſt adapted to that Diſtemper, are but trifling and inſignificant, we have thought fit not to give the Reader any Trouble with them, looking upon the Cures we have already laid down, to be ſufficient to anſwer all that can be propos'd, ſo far as inward Medicines may be ſerviceable; and if theſe be comply'd with in due Time, the Farcin will never have that Tendency to

inflame

inflame the glandulous Parts, and to fall out into Boils and Swellings about the Sheath and Belly, neither will it ever degenerate to the Greaſe, as it often happens when improper Methods are taken.

As to thoſe Cures which are ſaid to be perform'd by puttings the Juice of Rue, Beets, and other Pot-herbs, Bay-ſalt, Hemlock, Henbane, and the like, and thoſe which are conſtantly boaſted of, by tying inſignificant things to a Horſe's Mane or Tail, I believe no judicious Perſon will give much more Credit to them than I am willing to do, there being very little to be ſaid in Behalf of the firſt, and the laſt being monſtrouſly ridiculous.

The Farcin ſometimes cur'd by Exerciſe.

But any of theſe may ſucceed, if to them be added daily Exerciſe; and I have my ſelf been Witneſs to ſuch like Cures, in a very moderate and beginning Farcin; but then it was not the Application, but the Exerciſe; and nothing is more common among ſome Country People, than to Blood a Horſe for the Farcin, and to ſend him immediately to Plough; and while the Exerciſe is truly the Cauſe of the Cure, they generally attribute it to the Smell of the Earth; and agreeable to this is what we find in *De Grey*, in his Second Book, Chap. IX. towards the latter End of the firſt Section, where, after a great Number of inſignificant *Recipe*'s, he has theſe Words:

" But now I will give you, for a Cloſe, the beſt and " moſt certain Cure for this Diſeaſe that I ever yet knew, " and with which I have perfected more rare Cures of this " Nature, than of all the Reſidue before inculcated. And " thus it is:

" Take of Rue the tender Tops and Leaves only, with- " out any of the leaſt Stalks, a good handful, firſt chop them " ſmall, and then ſtamp them in a Mortar to a very Oint- " ment; when they are ſo well pounded, put thereunto of " the pureſt white tried Hogs-greaſe a Spoonful, and ſo work " them together to a perfect Salve or Ointment; that done, " ſtop into either Ear this whole Quantity by equal Por- " tions, and put a little Wooll upon the Medicine, to make " it keep in the better, and ſo ſtitch up his Ears, and let him " remain in the Stable four and twenty Hours at the leaſt, " and then unſtitch his Ears, and take forth the Wooll, " and either put him forth to Graſs, or elſe if he be to be " wrought, work him, for the more his Labour is, and the " more ſpare his Diet, the ſooner he is cur'd.

" This

" This I recommend to you for the beſt and moſt cer-
" tain Cure that I could ever meet with; for with this Re-
" ceipt only, I aſſure you on my Credit, I have cured
" more than an hundred Horſes, many of which were by
" other Farriers holden for incurable, and ſentenced to be
" Food for Hounds.

An Obſervation on the recited Paſſage out of De Grey.

But it is very plain, all that Rue can do, when uſed in this Manner, is but little, eſpecially in the Space of twenty four Hours; for it is demonſtrable from the Nature of the Farcin, as it is a Diſeaſe brought on by Length of Time, ſo it muſt of Conſequence require Time to its Removal, and in all chronical Diſeaſes and ill Habits it is the ſame; and therefore what this Author has applied to the Rue, was only owing to the Exerciſe, tho' I cannot approve of his Method of keeping a Horſe to hard Labour and a very ſpare Diet too, that being directly contrary to the Nature of all animal Bodies whatſoever, which muſt be enabled to do their Work by Food; and I am truly of Opinion, no Horſe was ever yet cured where this Rule was ſtrictly put in Practice; but how far a Horſe may be indulg'd in Feeding while the Farcin is upon him, any one, with a little Care and Obſervation, may in ſome Meaſure be a Judge. What relates to putting Rue, and other pungent and ſtimulating Medicines within the Ears of a Horſe, for ſudden Diſorders of the Head, has been already ſpoke to, where we treated of the *Staggers*, to which we refer the Reader. We ſhall therefore go on to the remaining Part of the Cure, which chiefly concerns the Applications made externally.

If due and proper Care was taken in the Beginning of the Farcin, there would be little Need of outward Means, otherwiſe than by waſhing the Sores with *Aqua Vitæ*, Brandy, or Wine, or with Urine, and ſuch like things. But the frequent Miſmanagement which Horſes have been expoſed to in this Diſtemper, has render'd both the Diſeaſe and the Cure the moſt complicated and perplexed of any that is to be met with in the whole Syſtem of Diſeaſes, inſomuch that there is ſcarcely an Herb or Plant, but what has been internally uſed and outwardly: There is no Poiſon, natural or artificial, that has not had ſome Share either in killing or curing Horſes who have lain under this Malady. But out of thoſe we ſhall endeavour to make the beſt Choice; neither ſhall we uſe them promiſcuouſly, and at a Venture, as has been hitherto done by moſt Practitioners, but by making

making the proper Diſtinctions ſuit them, as near as can be, to the Variety and Difference which is moſt obſervable in the Knots and Ulcers.

External Applications, when neceſſary, and how they are to be apply'd.

In ſome Kinds of the Farcin the Skin is but little, if at all, elevated, but only a viſcous Matter tranſudes, and paſſes thro' the Pores, and hardens like Corns; and this ſort we have obſerv'd not to be very difficult, but may be cured chiefly by Internals, as are but ſmall, and accompanied with little or no Inflammation. Yet becauſe when they continue long, there will be Matter gathered beneath them, the beſt Way is to anoint them with Oil of Bays, with a moderate Quantity of Quickſilver, and they will ſoon fall off.

When the Farcin makes its Appearance in Tumours that elevate the Skin, if they continue ſmall, they will probably end as the other: And therefore the Farrier ought not to be too buſy to ripen them, but leave them as much as can be to Nature; for in that Kind, the Matter very often finds a Paſſage for itſelf through the Pores of the Skin, and what is not turned to Matter, is waſh'd back again with the refluent Blood.

But the Knots and Tumours are ſometimes ſo diſpoſed, that without coming to a laudable Digeſtion, they grow fungous and open like a Sponge, and tranſmit a great deal of thin viſcid Matter through an infinite Number of little Holes and Interſtices in that looſe Subſtance. This is a bad kind of Farcin, and is apt to degenerate into very untowardly Sores. But the beſt Way to manage in this Caſe, and prevent its having any ill Tendency, is to dreſs them with the following Ointment.

"Take common Turpentine, or *Venice* Turpentine, four "Ounces, Quickſilver two Ounces; incorporate them in "a Mortar until the Quickſilver is kill'd, and the Ointment "turns to the Colour of Lead. Spread this upon Pledgits "of Hurds, and apply them upon the Sores.

The Turpentine will ſuck out the ſuperfluous Moiſture, and the Quickſilver will keep the Excreſcences under. This is a moſt excellent Remedy, and will ſeldom or never fail making a perfect Cure, if it be made uſe of in Time; and the Sores be dreſs'd with it once a Day, or once every other Day.

But the moſt common and ordinary Caſe is, where the Knots riſe pretty high, and are painful to the Touch, but at the

the ſame time give no Signs of their coming to Digeſtion while they continue ſo: Let the Horſe have daily the *Antimonial* or *Cinnabar Balls* exhibited to him, that, if poſſible, the Matter which forms the Cords and Knots may be thereby attenuated, ſo as it may be carry'd along with the Current, or may find a Paſſage thro' the Pores; for it is every one's Buſineſs, as much as may be, to avoid their breaking, and turning to Ulcers. For the endeavouring unskilfully to digeſt and break thoſe blind and dry Knots, which, of themſelves, have no Tendency to ripen and turn to Matter, is the Reaſon why they ſo often degenerate into thoſe indurated and hard Excreſcences, which we daily obſerve are ſo difficult to be removed. And therefore while the proper Means are uſed inwardly, which muſt never be neglected till the Diſeaſe is quite conquer'd and overcome, outwardly may be made uſe of the camphorated Spirits, *viz.*

" Take rectify'd Spirits of Wine one Pint, diſſolve in it " an Ounce and a half of Camphire: and with a Sponge dipt " in it, rub all the Knots and Cords five or ſix times a Day.

But if the Knots grow ſoft, and yield to the Impreſſion of your Finger, in this Caſe they ought to be opened as ſoon as they come to Maturity, eſpecially thoſe that are the largeſt, to prevent the Matter returning into the Blood. For although a ſmall Quantity of Matter taken up, and waſh'd back into the Veins with the refluent Blood, may be of no very ill Conſequence; yet when there happens to be much of it, and that its Diſcharge is prevented by the Thickneſs of the Skin, as is pretty uſual to Horſes, it is not unlikely that the Matter, when it returns in this Manner, may by its Acrimony and Sharpneſs, abrade the ſmall Veſſels, and thereby cauſe freſh Eruptions on other Parts of the Skin; or if that does not happen, its Stay and Continuance may cauſe a very ill Diſpoſition of the Part, eſpecially in thoſe Tumours and Knots that are ſeated near the Glands and Kernels. Now there are various ways of opening thoſe little Tumours; ſome Farriers prick them with an Awl, or with a large Needle, or other ſharp Inſtrument. Some pierce them with a ſmall Iron red hot, and ſomewhat rounded at the End. But many of our common Farriers pull out the Knots with Pincers; and there are ſome who uſe no other Method of killing the Farcin, as they often term it, but by giving the Fire.

No doubt, all theſe Methods may be practis'd in the Farcin in ſome particular Circumſtances; but the way of treating

ing those Tumors ought to be suited to their various Dispositions; but while they are nothing but small Pustules, full of Matter, neither the Fire, nor a hot Iron, is necessary, but a sharp Instrument with a keen Edge, particularly a Lancet, or Incision-knife; neither should they be pierc'd or bor'd, and then have Tents thrust into them, but the Orifice made large enough to discharge the Matter. For the most simple Sore may easily be chang'd to an ill-disposed Ulcer, by the Use of Tents, as shall be shewn in another Place.

If the Sores have no bad Tendency, they need only be dressed with warm Turpentine, or common Tar, keeping your Horse cover'd with a Sheet; and if they be sometimes wash'd with warm Brandy, or Spirit of Wine, it will be very proper.

This Method will be sufficient to cure all those Knots that are of a moderate Size, and easily ripen. But when there happen to be some that are pretty large, and can neither be discuss'd, nor brought to Matter, in that Case, if they were to be cut with a sharp cold Instrument, there would probably nothing issue out but Blood, and the Wound would soon close again; therefore, to them, a hot Knife, or a hot Iron, is the most proper; but then the Farrier should know very well upon what Grounds he meddles with them.

We shall now consider the Farcin in its more advanc'd State, *viz.* when it becomes attended with ill Accidents; to understand which aright, besides many other *Præcognita*, the Farrier ought to be pretty well instructed in the Art of Chirurgery. For, as we have already observ'd, the most simple Knots and Tumors may, when they are ill manag'd, degenerate into Ulcers, so we find this to be true by daily Experience; for there is scarcely any Ulcer, or preternatural Excrescence of any kind, which can grow out upon an Animal Body, but what is often the Effect of this Distemper, and proceeds chiefly, as we have also taken notice, from the want of proper Medicines internally, or even when the Medicines, tho' well adapted, have not been continued long enough to do their Business. The compelling Nature in bringing those things to Suppuration and Matter, which in themselves have no Tendency to it. The inducing a bad Disposition into the Sores and Ulcers, by the Application of fat greasy Medicines; and the incloſing of foreign Bodies within them, as Tents made of the Pith of Elder, and other spongy things, and even those of Flax. The injudicious Application of hot, caustick, and corrosive Medicines, and of the Fire itself: The exposing the Sores to the sharp Air; and a great many other such-like Errors.

The principal Intentions with reſpect to external Applications.

But that all theſe things may be made as eaſy and intelligible as poſſible, we ſhall reduce the whole Method of Cure in thoſe obſtinate Caſes to three principal Intentions: The *firſt* is, the cleanſing the Ulcers from Foulneſs; the *ſecond*, to ſuppreſs a Luxuriancy and falſe Growth of Fleſh; and the *third*, to deſtroy any ſuch Excreſcences when grown; and in this laſt there are alſo ſeveral Intentions, as we ſhall ſee anon.

As to the *firſt*, if the Farcin Knots have been open'd, and degenerated into foul Ulcers, if theſe are not deep, and their Lips grown callous and hard, the *Unguentum Ægyptiacum*, made chiefly of Honey and Verdegreaſe, which is ſufficiently in the Acquaintance of all Farriers, will, for the moſt Part, anſwer that End; or the Ointment made of Quickſilver and Turpentine, as above preſcrib'd; or *Baſilicum* mix'd with red Precipitate, in the following Manner.

" Take red Precipitate half an Ounce, rub it in a ſmooth " Mortar until all its ſhining Particles are deſtroy'd, then " mix it very well with two Ounces of *Baſilicum* to dreſs " the Sore withal.

The Precipitate is a moſt excellent Medicine when it is thus prepared; but in the Way the Farriers uſe it, it ſeldom ſucceeds, becauſe they apply it in a rough groſs Powder, as it comes from the Laboratory of the Chymiſts, and that alſo in a very large Quantity; which, inſtead of bringing an Ulcer into a good Diſpoſition, makes the Sore rankle, and become ten times worſe. I know this is alſo practis'd by ſome Surgeons, and one of conſiderable Name and Practice approv'd of it in my hearing; tho' I muſt needs ſay it is contrary to my frequent Experience; and it is likewiſe contrary to the true Intention of that Medicine, which is only to cauſe a purer Digeſtion, by inſinuating its finer and more ſubtle Parts into the little Canals and Pipes, thereby forcing thro' their Obſtructions; whereas, when it is applied in a groſs Powder, as it is indued with many ſharp Points, it only increaſes the Influx of Matter, by wounding thoſe tender Fibres, and thereby cauſes a greater Derivation of Humours to them, which ought to be avoided by every good Surgeon and Farrier. But thoſe who love to ſee a great Quantity of Matter follow their Dreſſings, may have their Expectations very near anſwered by the Application of Glaſs Powder, the Sand of an Hour-glaſs, or any thing elſe that is ſharp-pointed and cutting.

But

But in ſome Ulcers a milder Medicine than Precipitate may even be uſed, as the dulcify'd or ſweet Mercury, made into Powder in the ſame Manner as the former, and it will anſwer the End with equal Succeſs. As ſoon as they become clean and ſmooth at Bottom, and that they begin to fill up, they need only be dreſs'd with Honey mix'd with Spirit of Wine, which will both cleanſe and heal them; or, to make the Dreſſing ſit on the better, it may have Turpentine added to it.

The *ſecond* Intention, or the ſuppreſſing and keeping down proud and fungous Fleſh, may be done by the uſe of all gentle cauſtick Medicines, as waſhing the Sores with blue, green, or white Vitriol-water; but the blue is the ſtrongeſt, and may be made by putting an Ounce of *Roman* Vitriol to a Pint of fair Water, and letting it ſtand till it is all diſſolved. The Way of applying this is by dipping Flax into the Solution, and when you have ſqueez'd out the Moiſture, apply it as dry as may be to the Ulcers; and if Bandage can conveniently be apply'd over them, it will reſtrain the growth of proud Fleſh, unleſs the Horſe be inwardly diſorder'd, which muſt be carefully look'd into, that your Application may be ſuited accordingly.

If the proud Fleſh riſes very faſt, you may apply the Powder of blue Vitriol alone; and if the Part will not admit of Bandage, you are to ſupply the Want of it as much as you can, by applying dry Lint over the Powder to a pretty good Thickneſs, and above that a Plaiſter of *Burgundy* Pitch, or ſome other Plaiſter that will ſtick very faſt; and if you can incloſe a thin Plate of Lead wrapt up in the Flax, it will be very convenient, becauſe the Weight and Preſſure upon the Part, will contribute very much to this Intention.

There are many other Medicines of this kind that may be uſed with good Succeſs, as the Vitriol-water preſcrib'd for Rheums in the Eyes; and likewiſe the blue Water, and the Solution of the *Lapis mirabilis* out of *Solleyſell*, or the Powder of the ſaid Stone, all which may be ſeen in their proper Places; and many other things may likewiſe be met with in the Books of the beſt Farriers, which may be uſed in the like Caſe, which we have not room here to inſert; we ſhall therefore proceed to the laſt Intention which we mention'd in the Cure of the Farcin, *viz.* by laying down a proper Method whereby to deſtroy all manner of Excreſcences, which have either been occaſion'd by ill Management, or have baffled the common and ordinary Means us'd to prevent them; and herein we have undertaken a very hard and difficult Task.

And ſuch are thoſe Pieces of imperfect Fleſh, which we have obſerved to ſhoot forth from the little Ulcers in va-

rious Aſpects, ſome reſembling a Hen's Fundament, and ſome (as is not uncommon to Excreſcences of that Kind) having no diſtinct Reſemblance to any thing in Nature; but as they all agree in their Compactneſs and Solidity, whereby they have ſeldom any great Tendency to waſte, after they have once acquir'd ſuch a Diſpoſition; the Method propos'd in this Intention may therefore be put in Practice, ſo as they may be altogether rooted out; and this is to be done either by cutting or burning, or both, according as different Circumſtances may require.

The Knife is the moſt expeditious in all Caſes where they are looſe, and not firmly ſeated with a large Adheſion to the Fleſh, and when they lie off from the larger Veſſels, applying afterwards ſome cicatrizing Medicine; but this Method cannot be obſerv'd with reſpect to the whole, but only to thoſe which by Accident put forth in ſuch a Manner; and therefore burning Medicines, or the Fire itſelf, muſt alſo be us'd.

The Method of making cauſtick Applications in the Farcin.

But it ought carefully to be taken notice of, that in all Caſes where Medicines are to be apply'd, whoſe immediate Operation conſiſts in conſuming the Part to which they are laid; if the Diſeaſe be univerſal, and ſpread over divers Parts of the Body at once, as that under our preſent Conſideration, thoſe of the mildeſt Operation are firſt to be comply'd with; and that they may the more eaſily take Effect, the Parts ought either to be rubb'd till they become ſomewhat raw, or be gently ſcarrify'd with a Fleam.

Secondly, If Recourſe muſt be had to more powerful Medicines, or to the uſe of Fire, as is neceſſary in obſtinate Caſes; and if there be a vaſt number of Excreſcences to be deſtroy'd, and theſe ſeated in divers parts of the Body, you ought not to attack them all at once, but by degrees bring ſome to Digeſtion and Matter before you begin with others; for the communicating too great a Heat to divers Parts of the Body at once, as muſt happen from ſtrong cauſtick Medicines, or actual Fire, will either deſtroy your Horſe, by throwing him into violent and ſudden Diſorders, or at leaſt create a bad Diſpoſition, which, inſtead of making a Cure, will render him much worſe, as might be eaſily demonſtrated.

Thirdly, The Situation of the Parts is alſo very much to be regarded in this Intention, and all ſuch harſh Applications ought to be gently and ſparingly us'd to the Limbs and dependent Parts, and likewiſe to the Sheath and other ſoft Parts, to the Region of the Heart and Kidneys, *&c.* and when they have been apply'd to thoſe Parts, the Fire

ought

ought to be fetch'd out of them with all poſſible Expedition, by ſcarrifying the burnt Fleſh, and uſing ſuch Dreſſings as are able to keep down an over-great Inflammation, and bring them ſuddenly to Matter.

Laſtly, While the Operations are perform'd, a more than ordinary Care ought to be taken in a Horſe's Feeding; and if he be perceiv'd to loſe his Appetite, as that is a Sign they have been carry'd to the Height of his Strength, a ſeaſonable Stop ought therefore to be put to them, and he ſhould be continued to a Mediocrity in Diet, gentle, but daily Exerciſe; and ſometimes opening and laxative Clyſters may be exhibited, during the whole Courſe of ſuch Applications.

We ſhall put a Period to this Cure, by inſerting ſome few Medicines which may be ſuited to the ſeveral Intentions of cauterizing and deſtroying ſuperfluous Fleſh, whereof the two firſt are very mild and ſafe in their Operation, and may be us'd without any great Caution, excepting that the Horſe ought to be kept from Cold, and have his Water conſtantly warm'd.

" Take of Quickſilver four Ounces, *Venice Turpentine* two " Ounces, rub them in a Mortar until they are incorporated, " and the Quickſilver wholly diſappears, after which add two " Ounces of Honey, an Ounce of Verdigreaſe, black Soap, " and *Euphorbium* in Powder, of each an Ounce and a half.

" Take of Quickſilver two Ounces, *Venice*-Turpentine " three Ounces, black Soap one Ounce and a half, incor- " porate them as the former; then add *Euphorbium* and " *Spaniſh* Flies in Powder, of each an Ounce.

With either of theſe anoint all the Excreſcences once a day, holding a hot Bar of Iron to help the Medicine the better to penetrate; but firſt of all, if they be dry and without Moiſture, they ought to be rubb'd thoroughly with a Hair Cloth; or they may be gently ſcarrify'd, as has been hinted; but if they continue ſo obſtinate as not to waſte upon the Uſe of theſe things, then Recourſe may be had to the following.

" Take Oil of Bays and Quickſilver, or *Neapolitanum*, two " Ounces, Turpentine one Ounce, corroſive Sublimate in " Powder, and *Euphorbium*, of each an Ounce and a half: " Mix them together with as much black Soap as is ſuf- " ficient to make them into the Conſiſtency of a thick Oint- " ment, and with a wooden Slice anoint all Excreſcences, " taking Care not to ſpread it upon the ſound Parts.

This will ſoon deſtroy the Tumors, and in a ſhort Space reduce them to an Eſcar, which may be anointed with

warm Tar once a Day, until the Scab falls off; after which a ſmall quantity of Verdegreaſe may be mix'd with Tar, or any other Digeſtive, to cleanſe the Ulcers, to prevent a freſh Growth of proud Fleſh, which will be very apt to ariſe after thoſe fiery Applications, unleſs the Horſe be otherwiſe in good Order. What is further neceſſary, after cauſting Applications, may be ſeen in that Chapter where we have treated of *Burns* and *Gun-ſhot Wounds.*

Markham ſays, the Farriers, his old Maſters, were wont to take white Mercury, and after opening the Knots, they put a ſmall Quantity into each, which in a ſhort time made them fall off; but it ought to be very warily us'd, otherwiſe it will cauſe dangerous Swellings in the Limbs and Kernels about the Throat, as in an Inſtance I ſaw not long ago; but this Caution is hardly neceſſary to the Country Farriers, who ſeldom call for it by the Name of *Corroſive Sublimate*, as I have taken notice ſeveral times, ſo that the *Apothecaries* give them *Mercurius dulcis* inſtead of it, which altho' it does not form any thing like an Eſcar, yet as they pepper them very ſoundly with it, it is not always unattended with Succeſs.

The following is from *Solleyſell*; he calls it the *Ointment of Naples*, having had it communicated to him by a *Neapolitan* Groom, after he had ſeen many ſurprizing Cures performed by it; but altho' it has been us'd with Succeſs in every State of the Farcin, according to that Author, yet it is more peculiarly adapted to deſtroy Excreſcences, as it is made up of Ingredients that are altogether cauſtick, and ſomewhat ſtronger than that which we have laſt inſerted.

" Take Realgar and Sublimate, of each two Ounces,
" Arſenick and Euphorbium, of each an Ounce; beat
" them to fine Powder, and incorporate them, without
" Heat, with half a Pound of Oil of Bays.

" Keep the Ointment in a glaz'd Pot, and when you
" have Occaſion to uſe it, open the Knots or Swellings
" with a Lancet, and put into the Hole a little Cotton
" dipp'd in this Ointment, without heating it in the leaſt.
" The next Day, if you perceive that it is fallen away, you
" muſt put in a little Cotton with ſome freſh Ointment;
" but if it ſtick, one Application will ſuffice.

Theſe may be made ſtronger or weaker, or according as you mix them with a greater or leſſer Quantity of Ointment, and may be diverſify'd by changing one Ingredient for another, provided you keep a ſufficient Quantity of thoſe that are cauſtick. The Realgar is a Compoſition

made

made of Brimstone, Orpiment, and unlack'd Lime; the Ointment is no other than the yellow Arsenick, but obtains the Name of *Orpiment* from the Painters. *Corrosive Sublimate* is a Preparation of Mercury, which borrows its caustick and burning Quality from the *Aqua fortis* which enters into its Composition. Any of these us'd dry will yet be of more sudden Efficacy; unslack'd Lime, or the capital Soap Lees evaporated to a Dryness, will have the same Effect; or the Lunar Caustick, so much in the Acquaintance of Surgeons; and, in fine, all things that are plentifully saturated with Fire. But in the Farcin they ought to be guarded and made more moderate, as in the Manner above prescribed. Neither is the actual Cautery or Fire to be apply'd otherwise than as an Auxiliary, and to assist in other Intentions, *viz.* to keep down a luxuriant and fresh Growth of proud Flesh, after the Knife, or the more gentle Caustick. But the Reader may turn to the latter End of this Treatise, where the Nature and Use of that Operation is shewn.

CHAP. XLIX.

Of the Mange.

AS the Distemper we have treated of in the preceeding Chapter has its chief Seat in the Skin and fleshy Pannicle, that which comes under our present Consideration is yet more superficial, being principally seated on the Surface of the Skin only and Scarfskin; and therefore as the Mange is thus circumstanc'd, it is seldom attended with Pain and Inflammation, but only with an Itching, that thin membranous Tegument not being indu'd with any tender Sensation, as has been observed in the Beginning of the Anatomical Part; but yet if a Horse has been ill manag'd, or that the Distemper has been of a long standing, it is then apt to degenerate from what it was at first, and taking deeper Root, it causes Biles and Sores, which often have a very ill Tendency.

The Cause.

The Cause is from an over-great Quantity of viscid Serum bred in the Bodies of Horses by corrupt and foul Feeding, as the eating of Grains, a too frequent use of hot Mashes, Want of due Exercise, and the Want of good Currying, especially to a Horse that has been used to it; for by that Means the Pores become obstructed, and the Serosities of the Blood are thereby accumulated in the small Vessels of the Skin. Sometimes it proceeds from Want of Food and due Nourishment, whereby the Blood being depauperated, is render'd unable to reach

the Paſſages of the Skin to make a Secretion there; ſo that its ſerous Parts being detained in the ſmall Veſſels, turn corroſive, and break thro' the Skin; and ſometimes it is cauſed by Infection from other Horſes.

The Signs are, the falling off of the Hair, eſpecially about the Loins and Hams, and from moſt or all the Joints, according as the Diſtemper is more or leſs prevalent; ſometimes from the Head and Neck, but very frequently from the Rump. The Skin in thoſe Parts, by reaſon of the Heat and Corroſiveneſs of the Matter, turns thick and hard, and ſometimes cruſted like that of an Elephant, from whence ſeveral Farriers have term'd it the *Elephantick Malady.*

The Cure. As to the Cure, moſt Farriers lay a great Streſs on Bleeding, inſomuch that they drain away the Blood from ſeveral Parts of the Body at once, *viz.* from the Neck, the Plate-veins, from the Tail, and ſometimes from the Flanks; and all this from a firm, but ignorant Conceit, that in the Mange the Blood is full of Corruption, which, upon examining what has been already ſaid, will be found a ridiculous Practice, and very pernicious, eſpecially to thoſe Horſes that are low and out of Heart, as nothing ſo often makes the Diſeaſe degenerate into an ill Habit, which may eaſily be follow'd with Biles and Ulcers, as it weakens the whole Body, and thereby adds to that which is the Cauſe of the Diſtemper.

Therefore all that can be propos'd by Blooding, is to leſſen the Quantity thereof, when it happens to be redundant in a Horſe, in order to give a freer Paſſage and Circulation to the Juices in the extreme Parts, that the Secretions of the Skin may be daily perform'd, and this we judge very neceſſary; after once Bleeding, the following purging Drench may be given.

"Take Sena an Ounce, Jalap in groſs Powder ſix Drams,
"Roots of ſharp-pointed Dock a handful; ſlice the Roots,
"and boil all together in three Pints of Water to a Quart,
"paſs the Decoction thro' a Sieve, and add to it two Ounces of Syrup of Buckthorn." Or this:

"Take Jalap in Powder one Ounce, Diagridium two
"Drams, Cream of Tartar and Diaphoretick Antimony,
"of each half an Ounce. Mix them all together, and give
"them in a Pint of Ale.

Either of theſe may be given with the uſual Precautions, but they need not be often repeated; for Purging is no otherwiſe neceſſary for the Cure of the Itch than Blooding, and

and only gives it gentle Help when rightly uſed, as it cools and refreſhes a plethorick and full-body'd Horſe.

After theſe things, Recourſe muſt be had to outward Applications, for it is theſe alone that muſt give the finiſhing Stroke to it, as the Diſtemper is ſeated outwardly, and not deep rooted; and for that Purpoſe Nothing has ever been found more effectual than Sulphur, for which it bears the Teſt of all Ages; and if it ſometimes proves otherwiſe, it is altogether owing to the ill Management of it, or the other prepoſterous Methods that are made uſe of along with it. The following will kill any Itch in the Beginning.

"Take common Sulphur and freſh Butter, of each half "a Pound, Turpentine two Ounces. Mix them together, "and anoint all the Parts with it once a Day." Or this:

"Take the Roots of ſharp-pointed Dock half a Pound, "boil them in a Pint of Vinegar till they be ſoft, then pulp "them thro' a Hair Sieve, after which take of Bees-wax "two Ounces, Hogs-lard four Ounces. Melt them over a "gentle Heat, and mix them with the Pulp, then add half "a Pound of Flour of Brimſtone." Or the following:

"Take Elecampane Roots in fine Powder two Ounces, "the Roots of white Hellebore one Ounce, Flour of Brim-"ſtone four Ounces. Mix them in a ſufficient Quantity of "Ointment of Tobacco to make a ſtiff Ointment.

Either of theſe being rubb'd upon the Parts, with the Aſſiſtance of a hot Bar of Iron, once in twenty four Hours, will kill the Mange in a few Days; neither will it be neceſſary to fret the Skin to a Rawneſs, for, inſtead of doing Good, that Method proves more frequently prejudicial, as it excites too great Pain, whereby a too great Derivation of the Humours is cauſed towards the infected Parts; which is the Reaſon why even the beſt Farriers are obliged to have Recourſe to cauſtick Medicines, the Diſeaſe being grown too powerful to be deſtroy'd by thoſe of a milder Operation. The Uſe of Copperas Water and Allum Water is likewiſe prejudicial in moſt Caſes, as I have often obſerved; for all that theſe can contribute towards the Cure of the Mange, is only by allaying the Heat and Itching, in which albeit they may ſometimes ſucceed, yet as they obſtruct the Pores very much, by hardening the Skin, they make it liable to crack, often rendering thoſe Parts ſubject to freſh Heat and Inflammation, by which it degenerates to Ulcers and Boils. The beſt Way therefore is only to rub the mangy Places gently with a woollen Cloth,

to

to fetch a moderate Heat into the Part, for by that Means the Sulphurs will penetrate through the Pores into the ſmall Canals and Veſſels, with greater Certainty than when they are daub'd upon Places that are raw or incruſted.

This is the true Method of curing the Mange; or it may be done by the Uſe of Mercurials apply'd in the ſame Manner, whereof we ſhall alſo ſubjoin two or three Forms.

" Take of Quickſilver four Ounces, kill it in two Oun-
" ces of Turpentine, then by Degrees add Hogs-lard or
" Butter to the quantity of half a Pound." Or this:

" Take Quickſilver two Ounces, kill it in the ſame quan-
" tity of Turpentine, adding an Ounce of red Precipitate in
" fine Powder, with four Ounces of Lard or Butter.

Some make a Mixture of Quickſilver and Brimſtone, together with an Addition of Soot and Black Soap, which, in ſome moiſt and watery Caſes, may be of more particular Service. Some uſe Arſenick, Quickſilver, and other burning and cauſtick Remedies: But theſe ought never to be meddled with, excepting in ſome extraordinary degenerate Circumſtances, and when there happens to be Excreſcences that are dead and without Senſe, which can by no Means be brought to yield to milder Methods; but in an inveterate Mange, it will be of the greateſt Service to give your Horſe the *Antimonial* or *Cinnabar Balls*, preſcrib'd in the preceeding Chapter againſt the Farcin.

CHAP. L.

Of Tumors, Impoſthumes, and Abſceſſes.

A Tumor defined. THERE can ſcarcely be any one ſo much unacquainted with the common Terms, as not to underſtand, that by a Tumor is meant the Elevation and riſing of ſome Part of the animal Body into a preternatural Swelling; in what Manner that comes to paſs, has been in ſome meaſure ſhewn in the 48th Chapter, where we have taken Notice, that as often as the Blood, or their Juices, happen to be very much obſtructed in the ſmall Veſſels of any Part, that will be ſtretched out beyond its uſual Dimenſions, eſpecially as there is a perpetual Influx and Succeſſion of the ſame Fluid from behind; to which we ſhall add, that theſe Obſtructions are cauſed either by the Quantity or Quality of the ſame Fluid, whereby it preſſes and ſtretches one Part more than another; or when

when any Part happens to be hurt or weaken'd by external Accidents, whence being unable to make an equal Reſiſtance with the reſt of the Body, it will at length receive ſuch a Quantity of Fluid as will raiſe it into a Tumor.

The Writers of Surgery, in all Ages, carefully following one another's Steps, have reduc'd all Tumors to four general kinds, *viz.* into the *Natural*, *Encyſted*, *Critical*, and *Malignant*; and under theſe they have rank'd all the other Species. But this Diviſion is neither in itſelf very accurate, nor rightly ſuited to our Purpoſe, as our Buſineſs is with Horſes; we ſhall therefore reduce them to the *Natural* and *Encyſted* only. Of the firſt Kind are all Biles and inflam'd Swellings; and, in ſhort, whatever Tumors are form'd originally by the Fluids diſtending their proper Veſſels, whether they be critical or malignant, for theſe differ only in Degree from other natural Tumors. And of the ſecond are all thoſe that are form'd within membranous *Cyſts* or Bags, as *Wens*, *Anburys*, and ſome Sort of *Figs*, and other Excreſcences that grow on the external Parts of the Bodies of Horſes: And this agrees the beſt with what theſe Authors here obſerved with reſpect to the Formation of all Tumors by *Fluxion* and *Congeſtion*.

All Tumors reducible to the Natural and Encyſted.

Thoſe Tumours that are large, and come to Suppuration, and have Matter gather'd within them, whether they be *Natural* or *Encyſted*, are term'd *Impoſthumes*; and when the Matter is lodg'd within the common, but chiefly the larger Interſtices of the Body, as thoſe Furrows or vacant Spaces between the Muſcles, or between the Muſcles and Bones, they are then called *Abſceſſes*; but all Abſceſſes, and moſt kinds of Impoſthumes, are form'd of natural Tumors.

Abſceſſes and Impoſthumes.

But we ſhall conſider all Tumors, whether *Natural* or *Encyſted*, in the following Order: *viz. Firſt*, With regard to their Magnitude and Situation, there being little to be learn'd from their Figure and Colour, eſpecially in Horſes. *Secondly*, With reſpect to the Matter whereof they are form'd. And *Laſtly*, We ſhall lay down ſome general Rules to be obſerved in the Cure.

Tumors conſider'd with reſpect to their Size, Situation, and Matter.

Firſt, When a Tumor happens to be ſituated upon any Parts where there is no Depth of Fleſh, as on the Noſe and upper Part of the Face, it will not be apt to grow large; or if it be ſeated upon the Skin or fleſhy Pannicle, and free from

the

the ſubjacent Muſcles, it cannot be ordinarily expected to grow to a Bigneſs, there being no ſufficient Source for its Subſtance and Increaſe, as we have obſerv'd in a preceeding Chapter; and as thoſe little Tumors very often ſpread themſelves over divers Parts of the Body at once, being thruſt out in that Manner, becauſe of their Contiguity with the Skin, which, in ſome delicate Animals, is able to give little or no Reſiſtance, they are therefore the more unlikely to alter their Size, ſince it is very reaſonable to ſuppoſe they make a Revulſion from each other, whereby the Matter, which might have otherwiſe been diſcharg'd by the common and ordinary Secretions, or caſt off in one large critical Tumor, is evacuated by a vaſt Number of Tubercles and little Hurdles. But albeit Tumors thus ſituated do not ordinarily grow to any great Size, yet as all animal Bodies are made up of Veſſels which are capable of Extention and Dilatation, when there is a continual Addition of freſh Matter, therefore ſome Tumors that are very ſuperficially ſituated, and have but a ſmall Beginning, will increaſe to a very large Bulk.

And it is from hence we may account for Wens, Anburies, and all ſuch other Excreſcences, *viz.* when ſome Duplicature of a Membrane or ſmall Veſſel is, by an Accumulation of Matter, protruded and thruſt forth beyond the common Limits of the Horſe's Body, yet in ſuch a Manner as gives no great Diſturbance to the Circulation of the Fluids that are within; therefore, as they are not apt to cauſe Pain, they will therefore grow in Proportion to the quantity of Matter which is empty'd into them; and Nature ſo far encourages their Growth, as to enlarge thoſe Veſſels which nouriſh the Skin, and other Integuments wherein that Matter is contain'd.

But it is quite otherwiſe with thoſe Biles and Tumors that are ſeated in the fleſhy and muſcular Parts; for as they occaſion violent Pain by ſtretching out the Veſſels and Fibres, and as the Pain cauſes a conſiderable Afflux of Matter, therefore any Swelling form'd that Way muſt have a ſpeedy Iſſue and Determination, by the burſting of the ſaid Veſſels; and it likewiſe cuts off the Communication of the Blood in thoſe Parts, and therefore it will become a running Sore, until there is a Re-union of the Parts that were tore and disjoin'd.

Now all ſuch Swellings are uſually larger or ſmaller, according as their Situation is more or leſs in the thick Fleſh, and according to the Multiplicity and Size of the Veſſels which

which go to their Nouriſhment, and likewiſe as the Matter finds more or leſs Room for itſelf, as happens in Abſceſſes. The Dependency and Softneſs of the Part contributes alſo to the Augmentation of the Swelling and Increaſe of the Matter, becauſe the Return of the Blood is but ſlow from the inferior and dependent Parts, and becauſe the ſoft Parts are eaſily ſtretch'd out when once the Blood has taken a Tendency towards them, which is plainly evident from thoſe ſudden and exceſſive Swellings which ſometimes ariſe in the Fundament and Sheath.

Bones and Sinews liable to Swellings.

But the Bones and Sinews are alſo liable to the like Infirmities, yet the Swellings, which happen to them and other compact Parts, ſeldom riſe to any conſiderable Bigneſs, becauſe of their Solidity and Hardneſs, which hinders their being extended; but for the ſame Reaſon makes them very tedious and difficult to be remov'd; and if a Horſe is put to much Exerciſe while the Sinews are relax'd, the Pain and Anguiſh will cauſe a Swelling in the neighbouring Fleſh; and this we may frequently obſerve in Strains of the Shoulder, Back, and Limbs. As for Tumors in the Bones, Horſes are indeed not very much ſubject to them, excepting when they are caus'd by old Ulcers that corrode and penetrate to the Bones; and this is plain enough in thoſe Horſes that have been founder'd and batter'd in their Feet for ſome conſiderable time, where the diſeaſed Foot may be obſerv'd to grow much larger than the other, the Coffin-bone being often in that Caſe affected. Neither is it improbable that ſome of thoſe Horſes that are very large jointed, miſhapen in their Limbs, and narrow cheſted, have had their Bones diſeaſed while they were young and pliable, not unlike thoſe of ricketty Children.

Swellings of the Kernels.

The Swelling of the glandulous and kernelly Parts is alſo very troubleſome, as cannot be unknown to any Farrier of Practice, though ſometimes they will come to as quick and ready a Diſcharge as thoſe of the muſcular Fleſh. And when this happens, Nature is in her full Vigour, and the Horſe is otherwiſe ſound and able to feed: But when a Horſe is weaken'd and brought much under by any lingring and waſting Diſeaſe, a Swelling in the Glands will often continue hard and immoveable, and without much Pain, Increaſe, or Diminution; and this is very much owing to the Structure and Make of the Kernel itſelf, which altho' it be but a ſoft Part, yet it is ſo compact,

pact, and its Veſſels ſo ſmall and cloſely laid together, as cannot but render them eaſily obſtructed. But yet in the Caſe we have mentioned, when a Horſe has a lingring Diſeaſe upon him, the Swelling does not readily increaſe, becauſe the Matter is but ſlowly derived towards it; and likewiſe as the Paſſages of the Gland are more than ordinarily inlarg'd, therefore a Quantity of Matter is diſcharg'd proportionable to the Supplies it receives; and the Smallneſs and Compactneſs of the Veſſels, and their Diſpoſition into an infinite Number of Circumvolutions and Turnings, is alſo the Cauſe why the Swelling does not eaſily decreaſe.

Thoſe Swellings of the glandulous Parts that turn to Impoſthumation and Matter, are many of them of the *encyſted* Kind; and that is alſo owing to the Structure and Make of the Kernels, moſt, if not all of them, having little *Cyſts*, or Receptacles for their proper Juices, which may be eaſily fill'd and enlarg'd, when their excretory Ducts are wholly, or in a great Meaſure ſhut up; as muſt undoubtedly happen in all ſuch Caſes.

The Matter examin'd.

But we come in the ſecond Place to take a View of thoſe Swellings, with regard to the Matter whereof they are form'd; and here it will be neceſſary to conſider, that the Matter becomes various according to the various Diſpoſition of Horſes, or according as the Tumors are variouſly diſpoſed and ſeated; for when they happen to be ſuperficial and outward, the Matter is then, for the moſt Part, dry, which depends, in a great Meaſure upon their Proximity and Nearneſs to the Skin, whereby the thinner Parts are the more eaſily evaporated, and caſt off thro' the Pores; tho' in other moiſt Conſtitutions, the Matter will ſometimes be humid and moiſt. The Matter deriv'd from Membranes and Sinews is generally thin and viſcid, and that which comes from Bones is oily and ſtinking; but the Matter which is more immediately derived from Blood, if a Horſe be in good Caſe, is of a middle Nature, neither too thick nor too thin, neither is it too watery nor too viſcid. And thus it ſeems to be very plain and evident, as all Matter is form'd of Blood, or the Juices produc'd of Blood, the Matter, in all Tumors, will therefore participate chiefly of thoſe Juices from whence it is immediately derived.

The next thing to be regarded in the Matter, is its Colour, and this alſo depends upon the Diſpoſition of the Blood. If the Blood abounds with Choler or Gall, the Matter will be yellow; and it will be more or leſs ſo, according

cording as that is more or leſs predominant. If there is a too great Secretion of the Gall, then the Matter will be more than ordinary white; and in ſome Obſtructions, when the Blood abounds with earthy Parts, or when theſe are eaſily ſeparated, the Matter will look foul and duskiſh, and ſometimes be ſtreak'd with black Blood, and the Tumor will alſo look livid and of a Lead Colour. And ſometimes from a various Combination of Humours, the Matter becomes of different Colours.

The Cure of Tumors.

But *Laſtly*, what we are further to obſerve concerning Tumors, is to lay down ſome general Rules for their Cure; and here it will be neceſſary chiefly to have an Eye to their ſeveral Cauſes; and firſt, a Tumor that comes by any outward Accident, can only be dangerous according as the Accident is more or leſs violent; but the leaſt Accident, where there is a Redundancy of Blood, may be troubleſome, as well as when a Horſe is poor and low. When there happens to be a Redundancy that muſt be remov'd by Bleeding, and other Evacuations, as far as is conſiſtent with the Horſe's Safety; but on the other hand, when a Horſe is low, and has got ſome waſteing Diſtemper upon him, beſides the outward Intentions, Care muſt be taken to adminiſter ſuch things as are proper to remove that Indiſpoſition. And in all critical Swellings, by which we chiefly underſtand thoſe which tend to the Solution of Colds, malignant, peſtilential, and other Fevers, the Management muſt be according as the Diſeaſe is perceived to be more or leſs malignant, taking Care always to aſſiſt, but never to reſtrain Nature; but the Reader may conſult the third Chapter, and thoſe other Places where we have treated of malignant Diſorders, of the Strangles, of the Vives, *&c.* which are ſometimes critical.

The next thing to be regarded in the Cure of Tumors, is their Situation; what relates to internal Tumors and Impoſthumations, has already been ſpoke to, where we have treated of *Foundering* and *Cheſt-foundering*, in which we have recommended the ſpeedieſt Methods of Revulſion by Blooding and Purging; but eſpecially by thoſe Things that promote Sweat, and keep down Pain and Inflammation. But as to external Swellings, the principal Intention is either to ripen or diſcuſs them, according as may be moſt beneficial. Thoſe which are durated and hard, without Heat and Inflammation, ought chiefly to be treated with Internals, and ſuch as are very powerful to open Obſtructions, with the Aſſiſtance of thoſe Things outwardly which

which are proper to discuss and dissolve. But those Swellings which are hot and inflam'd, ought to be ripen'd, unless when they are seated where they may cause too great a Derivation of the Humours, as on the Sheath, Fundament, Limbs and Throat, *&c.* but yet if these be malignant or pestilential, it is better to run any other Hazard than not bring them to Maturity; wherefore the Medicines in this Intention ought to be such as ripen, but at the same time are not over-powerful in drawing; and for this Purpose the Reader may also consult those Places where we have treated of the *Bastard Strangles* and *Vives*, &c.

When the Tumor is seated near the Interstices of some large Muscles, it ought to be opened so soon as there is Matter form'd within it, otherwise, if the Matter be detained, it may separate the Muscles, and thereby form a Lodgment for itself; and the longer before it is opened, the larger will be the Abscess.

In the opening of Abscesses, if they be small, a large Orifice made in the dependent and lowermost Part, with the Assistance of good Bandage to keep those Parts close together, will be sufficient to make a perfect Cure; but if they happen to be large and deep, they ought then to be laid open the whole Length, unless the Skin can be kept depress' by the Application of Flax into the hollow Part; for so long as there is any Lodgment for the Matter, the Abscess will be constantly fill'd. The same Method is to be observ'd, as near as possible, with respect to those Tumors that are large, and have a pretty large Cavity formed within them.

The propereſt Dressings in all such Cases are Turpentine, or Turpentine mixt with Honey, or the Yolks of Eggs, with a small Quantity of Brandy, or Spirit of Wine; and in most Cases where there is not an ill Habit of Body, these will be sufficient to make a perfect Cure.

But Wens, Anburies, and other encysted Tumors, require a peculiar Treatment, and for the most part, ought to be quite extirpated. The Anburies, which we observe frequently to hang at the Legs, and sometimes at divers other Parts of a Horse's Body, and consist only of a thick Jelly, or spongy soft Flesh; as these have generally a small Neck next to their Insertion, they may be taken off without much to do, only by tying a waxed Thread round them, straitening it by Degrees; and if after they are falling off, there be the Appearance of a fresh Excrescence, that may

may be kept down by the Help of ſome gentle Corroſive, together with the Uſe of Bandage; and for this Purpoſe Flax or fine Hurds, dipt in Vitriol or Allum Water, will ſuffice.

But to a Wen, or any other Tumor of that kind that grows to Bigneſs, a hot Knife muſt be us'd when it happens to have a narrow Root; but if you have Reaſon to ſuſpect the Veſſels which lead to it are become very large, whereby a too plentiful Effuſion of Blood may happen, or if it be broad at Bottom, the beſt Way is then to open it, cutting the Skin both ways a-croſs, if there be Matter within it that muſt be evacuated, and then the Bag and other ſuperfluous Parts deſtroy'd by Degrees, which may be done either by cutting or burning, or by the uſe of cauſtick Medicines; but the Knife is the moſt expeditious; and if it be of Subſtance to keep the Heat, it may be made to anſwer in moſt Caſes.

The Swellings of the Joints, and Relaxation of the Sinews, are no otherways to be treated, than by applying ſuch things as are proper to diſcuſs and ſtrengthen them; but the Accidents to which theſe Parts are chiefly expos'd, will be particularly handled in ſome of the enſuing Chapters.

CHAP. LI.

Of Wounds.

THERE is no one but knows, when any Part of a Horſe's Body is cut, torn, or otherwiſe divided, he is then ſaid to be wounded, ſo that Wounds are various, and differ one from another, according to the Diverſity of Accidents by which they are cauſed; ſome are ſuperficial, others deep. Wounds happen ſometimes to be ſtreight, according to the Tenure and Direction of the Fibres; ſometimes they are oblique or tranſverſe, that is, ſlanting or athwart. If the Inſtrument be ſharp, the Parts will, generally ſpeaking, be equally divided; but if otherwiſe, the Wound will be ragged and tore, which is uſually the Caſe of Horſes that have been ſtak'd.

The Diverſity of Wounds.

We alſo diſtinguiſh between the Wounds that are ſimple, and Wounds that are complicated; thoſe are ſaid to be ſimple, where the ſoft Parts are divided without the Concomitancy of other Accidents; and thoſe Wounds are termed complicated, where, beſides a Diviſion of the ſoft Parts, there is alſo a Contuſion of the Fleſh, a Fracture or Diſlo-

cation of the Bones, all which Circumſtances make the Cure of Wounds more or leſs difficult.

But the chief thing to be regarded in Wounds is their Situation; for albeit Wounds in the external fleſhy Parts are not very dangerous, conſider'd as ſuch, yet thoſe of the nervous Parts are often of ill Conſequence, when there happens to be an ill Diſpoſition of Body, as they are apt to cauſe exquiſite Pain, and ſometimes when the ſmall Threads and Fibres of the Sinews are ruffled and tore, they will bring on a Gangrene and Mortification of the Part; whereas when they are equally cut, they are not apt to be attended with ſuch Accidents. But inward Wounds generally prove mortal if they pierce the *large Veſſels*, the *Stomach*, the *ſmall Guts*, the *Bladder*, the *Spleen*, the *Liver*, the *Heart*, the *Lungs* or *Midriff*, and theſe are deadly upon a double or treble Account, as moſt of them are not only endow'd with a tender Senſation, but alſo a muſcular Action, whereby their Re-union is hinder'd, and likewiſe as many of them are ſtored with a Multiplicity of Blood-veſſels, which are large; but internal Wounds, which miſs thoſe principal *Viſcera*, may be cur'd, and ſome of theſe, if they be but ſlightly touch'd, are alſo ſometimes curable, though not readily in brute Creatures, who cannot be brought to a Compliance with all the Requiſites that are neceſſary in ſuch Caſes. Wounds penetrating the Subſtance of the Brain are alſo incurable, becauſe of its Softneſs, the Multiplicity of its Veſſels, and the tender Senſe of its Membranes.

As for the Signs of Wounds, they are manifeſt to the Eye, and when they are deep or inward, are further diſcoverable by the Help of a Probe, and by divers other Circumſtances; as for Inſtance, if the Lungs be wounded, the Air will penetrate thro' the Wound with a frothy Blood of a Vermilion Colour. When the Stomach is wounded, there will be a violent Sickneſs, with a ſudden Loſs of Appetite, and the Chyle uſually iſſues forth from a Wound in the ſmall Guts, and the Urine from a Wound in the Bladder; and when the Kidneys are wounded, the Horſe will ſtale Blood. By theſe and many other ſuch Signs, internal Wounds may be known; but we ſhall proceed to the Cure, wherein we ſhall begin with ſome general Directions.

The Cure. And *Firſt*, Care muſt be taken to ſtop the Blood, when there is too plentiful an Hemorrhage. *Secondly*, The Wound muſt be cleans'd of Dirt, Sand, Splints of Wood, or any other foreign Matter. *Thirdly*, All the Applications made to a Wound ought to be

be warm, eſpecially in the Beginning. *Fourthly*, It ought not to be expoſed to the Air. *Fifthly*, When the Wound penetrates downwards, and the Orifice happens to be too narrow, it ought to be widen'd either by Inciſion, or dilated with a bit of Sponge, or ſome other porous Matter that will ſwell; but this is only to be done where Bandage cannot be apply'd. *Sixthly*, The Probe is to be uſed as ſeldom as poſſible, neither ought there to be long Tents thruſt into any Wound; for by theſe, Wounds that have no bad Tendency, naturally often degenerate into Ulcers of the worſt Kind. *Laſtly*, Greaſy Ointments are for the moſt Part to be rejected, as they are apt to cauſe the Fleſh to grow too faſt; and when that happens, it muſt be kept down with good Bandage, or the Application of cauſtick Medicines; but Bandage is of the greateſt Importance in the Cure of all Wounds, where there are not ſome Circumſtances to forbid its Application.

To ſtop Bleeding.

To ſtop the Hemorrhage or Bleeding, the beſt way is, before the Horſe is over-much ſpent, to make Revulſion, by opening a Vein on the Foreparts, if the Wound be backwards; but if the Wound be forward, a Vein may be opened toward the hind Parts: But in external Wounds, where the Hemorrhage is large, that is generally owing to the Seat and Diſpoſition of the Wound, whereby ſome large Branch of an Artery happens to be cut; but if the Artery, from whence the Blood chiefly flows, be not very large, it muſt then be ſuperficial, as about the Noſe, Temples, or the skinny Part of the Legs, *&c.* where the Veſſels are unguarded with Fleſh; for albeit the Arteries in a deep Wound may pour forth Plenty of Blood while the Wound is recent and new, and that there is a free Paſſage; yet this occaſions ſo great a Derivation towards the Wound, that even the Coats of all the wounded Veſſels become diſtended and ſwollen, ſo that by their Preſſure upon one another, their Orifices are ſhut up and ſqueez'd cloſely together; and in this Caſe there is ſeldom need of any ſtiptick Application to ſtop the Bleeding.

But when the wounded Artery happens to be very large, or much expos'd, as has been taken notice of, ſo that the Blood flows too plentifully, it muſt be ſtopt either by applying a hot Iron, or ſome cauterizing Medicine, otherwiſe it muſt be tied by paſſing a Needle under it, and then binding it with a wax'd Thread; but neither Ligature nor actual Cautery is ſo certain as cauſtick Medicines, becauſe an Eſcar made by the actual Cautery is apt to fall off too ſoon; and

an Artery, when it is ty'd, is apt again to fall a bleeding as ſoon as the Threads rot off, eſpecially one that lies ſuperficial and unguarded, and has not the Advantage of being compreſt by the Fulneſs and Weight of the ſurrounding Veſſels.

Therefore in this Caſe, make a ſmall Pledgit of Flax or fine Hurds, moiſten it with the White of an Egg, then lay as much Powder of *Roman* Vitriol upon it as will fully cover the Mouth of the Artery, and apply it over the ſame; but Care muſt be had not to apply Vitriol, or any other cauſtick Medicine, where the Sinews are expos'd and laid bare, unleſs you can fall upon ſome Method to defend them from being touch'd by it, otherwiſe it will be apt to cauſe Convulſions; but in Places where theſe are moſt expos'd, as the Legs, *&c.* the Arteries are not very often ſeated cloſe to them; and if it were ſo, milder Medicines might be made to anſwer; becauſe what is wanting in the Medicine, may, for the moſt Part, be ſupply'd by Bandage; therefore, when the Wound happens to be on the Legs, you need only apply the aſtringent *Crocus* of Iron, fine Bole, or Powder of dry'd Muſhrooms, mixt with the White of an Egg, and ſpread upon a Pledgit, as above directed, and over that two or three thick Compreſſes dipt in the ſame Aſtringent, making a firm Bandage over all.

The Dreſſing ought not to be removed for the ſpace of three Days, that the Wound may be digeſted, and there may be no further Trouble with a freſh Flux of Blood. If a Swelling happens in the Leg, by reaſon of the Bandage, bathe it with warm Lees of Wine, or ſome good Fomentation, ſuch as that hereafter preſcrib'd for a Gangrene; afterwards dreſs the Wound every Day with the common Digeſtion. The ſame Method is to be followed in thoſe Wounds where cauſtick Medicines are apply'd, leſt by taking off the Dreſſings too ſoon, you ſet them a bleeding afreſh, by removing the Eſcar before it is thoroughly form'd.

But becauſe the right ordering of all ſuch Wounds as are attended with an Effuſion of Blood is of the greateſt Importance, there being but few Farriers who have skill to manage them according to the Rules of Practice, eſpecially when any uncommon Accident happens in the Cure; we ſhall therefore lay down a Method of making the Sympathetick Powder, which being apply'd to the Wound as a Stiptick, will not only put a Stop to the Blood, but procure a ſpeedy Re-union; and this, as *Solleyſell* rightly obſerves, may be very neceſſary in the Camp, where Flies and other Inſects are hurtful. *Solleyſell*'s way of preparing the Sympathetick

pathetick Powder, is by calcining *Roman* Vitriol in the Sun; but the following Method is much more preferable, and only requires a little more Pains.

The Sympathetick Powder.

" Take any Quantity of *Engliſh* Vitriol " ſuch as goes under the Name of *Bow-* " *Copperas*, diſſolve it in Water, and filter " it thro' brown Paper, ſet it into a cool Place to ſhoot " into Cryſtals, diſſolve the Cryſtals in the ſame Manner, " and let it paſs thro' the Paper as directed, repeating the " Operation until the Cryſtals are tranſparent and pure. " Set thoſe Cryſtals in a clean Pan in the Sun, either in " *June*, *July*, or *Auguſt*, ſo long as they are calcin'd to " Whiteneſs; when one Side is calcin'd, turn the other, and " in a few Days the Cryſtals will crumble into Powder; " if they do not, they may be again beat and expos'd to " the Sun, and ſtirr'd three or four times every Day, at laſt " beat them into a very fine Powder, and again ſet them " in the Sun, ſtirring as before for two or three Days more, " in which time they will be very white, then take in the " Matter while the Sun ſhines hot upon it, and keep it " from the Air in Glaſſes well ſtopt, and in a dry Place.

This is the Method of preparing the *Sympathetick Powder*, as it is inſerted in Dr. *Quincy*'s Diſpenſatory; to which I ſhall ſubjoin another out of the ſame, that bears the Title of a reſtringent Preparation of Iron, ſold by the Name of *Colebatch*'s Stiptick Powder, and is as follows.

Another Stiptick Powder.

" Take any Quantity of Filings of Iron, " and pour upon them Spirit of Salt, to the " Height of three or four Fingers above them. Let them " ſtand in a gentle Digeſtion till the Fermentation is over, " and the Spirit of Salt is become ſweet, then pour off what " is liquid, and evaporate it in an iron or glaſs Veſſel until " half is conſum'd, at which time put to it an equal Quan- " tity of *Saccharum Saturni*, and evaporate to a dry Pow- " der; if upon its firſt coming dry the Operation be ſtopt, " it has exactly the Appearance of *Colebatch*'s Powder; " but if it be continued longer, and the Heat raiſed, it will " turn red. It muſt be kept cloſe ſtopt from Air.

This Stiptick may not only be eaſily made, but is the more for our Purpoſe, as the Doctor has made an Experiment of its Efficacy upon a Horſe; his Words are theſe concerning it.

" If this is not kept cloſe ſtopt, it will imbibe the Air, " and flow ſo as to loſe its Efficacy. I have been inform'd " by very good Hands, that this is the Stiptick with which " there was ſo much Noiſe made ſome time ago by the

" Author of the *Novum Lumen Chirurgicum*, and for the " Sale of which a Patent was procured, only in that was " uſed Oil of Vitriol, inſtead of the Spirit of Salt in this ; " but that Difference is inſignificant. Of this I kept ſome " by me for a Time, to wait a proper Opportunity to try " it ; when an extraordinary one happen'd by a blunder- " ing Farrier cutting the *Jugular Artery* of a very fine " young Horſe, as he was pretending to take off ſome ad- " ventitious Kernels that grew under his Throat. The Flux " of Blood was ſo prodigious, that the Creature muſt have " forthwith died, had not the Fellow held faſt the wound- " ed Veſſels, by griping the Part with his Hands, which " prevented the Effuſion, until I diſſolved ſome of this " Powder, or rather Salt, in ſome warm Water, and with " the *Currier*'s Shavings of Leather dipt in it, apply'd it " upon the Part, where tying it as faſt as the Part would ad- " mit of, and haltering the Horſe's Head up to the Rack for " about ſixteen Hours, when it was taken off, not one Drop " of Blood afterwards followed, and the Part was eaſily " incarnated, and healed up. This is a Preparation of " *Maetis*, once Profeſſor at *Leyden*, and is in the *Collec-* " *tanea Chymica Leydenſia*, how much ſoever ſome have " pretended to make a Secret of it ſince.

The ſame Author further takes Notice, that this Styptick has been recommended inwardly to ſtop Fluxes, eſpecially thoſe of Blood ; but we are very ſure it may anſwer that End in all Wounds, when apply'd as in the Inſtance before recited. And in this reſpect it may be made uſe of by thoſe who are but little skill'd in the Practice of a Surgeon or Farrier : As may alſo the Powder of *Sympathy*, tho' we cannot adviſe any one to depend upon its ſympathetick Virtues.

Having ſaid thus much concerning the firſt Intention, to wit, the putting a Stop to the Blood in Caſes where the cut or ruptur'd Veſſels are large or expoſed ; we ſhall now proceed to the other Requiſites in the Cure of Wounds. But we ſhall in the firſt place take notice, that in all good Conſtitutions a freſh Wound will be eaſily cur'd, if it is not overmuch expoſed to the Air, as we ſee in many Inſtances, both in Brutes and human Bodies ; and a Wound made according to the Direction of a Muſcle, or only ſomewhat ſlanting, will heal with little or no Application, if the Horſe is not put to hard Exerciſe ; for in that Caſe, as often as the Muſcle is contracted, the Wound will be more or leſs opened, according to the Force whereby the wounded Member is moved. But all Wounds that are large ought to be ſtitch'd,

and

and when that is rightly perform'd, nothing contributes so much to their Re-union, as it in some Measure prevents the Inconveniencies of Motion, and likewise as it puts a Stop to the Swelling; which, without a plentiful and speedy Discharge, will often cause Ulceration, together with a preternatural Hardness in the Lips.

Stitching and Bandage are nearly ally'd to each other, and sometimes the one supplies the Room of the other; but most Wounds may be easily cured, when stitching and Bandage can come in to one another's Aid. Wounds which are large and deep, and which may be press'd together with your Fingers, are the most fit to be stitch'd; but Wounds that penetrate to the Bone ought not to be stitch'd when the Flesh is much divided from the Bone, otherwise an Abscess may be form'd which will cause the Bone to putrify; the same Caution is also to be observ'd, when by your Probe, or by a Swelling distant from the Wound, you have Reason to suspect some of the Muscles are divided, as it happens in very large Contusions. In this Case Bandage is only to be made use of, with the proper Applications to the Wound; but if the Swelling continues, which for the most part happens, if at all, underneath the Wound, and therefore becomes unable to bear a firm Bandage, it must be treated as an Impostume, by the Application of ripening Cataplasms; and when it comes to Maturity, it must be opened as low as possible, that the Matter may have a free Passage and Vent, after which the Bandage will become of infinite Service.

Large Wounds ought to be stitch'd, unless they penetrate to the Bone, or form an Abscess.

Wounds that are of a round and circular Figure cannot be stitch'd, but Nature must fill up that Space by Degrees; neither can those be stitch'd which are very much ragged and torn; but in a Wound that has several Points and Angles, Stitches may sometimes be made to do Service, but for this Purpose no general Rule can be laid down. *Solleysell* advises to cut all circular Wounds into a large Figure, but that needs seldom be done where Bandage can be apply'd; for the only thing that makes a circular Wound hard to cure, is, when the Bottom of the Wound happens to be large and loose, or bruised, or when the Wound penetrates perpendicularly downwards; in this Case, a moderate Incision downward may be made; but when a circular Wound is not very deep, or if it is not in some respect like a Well, or Pit, the Application of Bolsters and Bandage to keep it firm at the Bottom, will, for the most part, suffice.

Wounds of a circular Figure.

Wounds among the Sinews.

Laſtly, The Needle is to be ſparingly us'd among the ſenſible and nervous Parts; for altho' there are divers Circumſtances which may require ſtitching, even where the Tendons are wounded; and altho' it may be more particularly gone about where there is a very ſound Conſtitution, yet as there is an Ichor and viſcid Matter perpetually flowing from the Tendons, even in the beſt Habits, which cauſe untowardly Accidents; therefore, as theſe are oftentimes heighten'd by ſtitching, the Practitioner ſhould be very well vers'd in Practice, to endeavour the Cure of ſuch Wounds, otherwiſe than by proper and plain Dreſſing; for if this Operation has not always the deſir'd Succeſs on human Bodies, who can be managed ſo as to keep the Muſcles, to which thoſe Tendons belong, from all Manner of Action, much leſs can be expected from Brutes, but eſpecially Horſes, who keep more in a ſtanding Poſture than any other, and therefore are not only oblig'd, and under a Neceſſity ſometimes to move thoſe Parts, but even at moſt times to lay a great Weight upon them.

The Manner of Stitching.

To perform this Operation aright, the Farrier ought to be provided with ſeveral Needles, ſome ſtreight, and ſome crooked, and of theſe ſome ought to be more arched than others, and accommodated to Wounds that are deep, and for this End alſo they ought to be of different Sizes. Both the ſtreight and crooked ſhould be edged, and not round, that they may the more eaſily penetrate, and cauſe the leſs Pain; and thoſe that are appointed for deep Wounds ſhould be ſtrong, that they may not break, and cauſe Trouble in the Operation. But in all theſe Things the Farriers may take Pattern from the Surgeons.

The ſtitching of ſuperficial Wounds ought to be perform'd with a ſtreight Needle, and is chiefly neceſſary upon Parts that are prominent and expoſed to View, where the Skin being only burſt, gives way, and opens wide, tho' it be not much ſeparated from the ſubjacent Fleſh; and if it is not drawn together, it will leave a Baldneſs; or the Hair that grows upon the Part will be white, and ſofter than that which covers the reſt of the Body, either of which becomes a Deformity upon the Cheek, the Tops of the Loins, or upon any Joint, as we ſometimes obſerve when theſe Parts have been gall'd, and when there is no Room for ſuch an Operation.

But in all deep Wounds a crooked Needle muſt be us'd, and of ſuch a Form as will eaſily make a Compaſs under the

the Wound; for the Farriers Method of taking the Lips together with a common ſowing Needle, or Pack-needle, as I have ſometimes obſerv'd, is quite ſhort, nay, contrary to the Intention of Stitching, and often does a Deal of Miſchief, and would do much more if the Stitches did not ſoon break, as it leaves Room for the Matter to gather in the Bottom of the Wound. Therefore when the Farrier goes about the ſtitching of a deep Wound, he ought firſt, if there be congeal'd Blood within it, to clean that out, and having preſs'd the two Sides together, he muſt make his firſt Stitch at the Middle of the Wound, paſſing his Needle ſo as to deſcribe a half Circle under it, and with a ſtrong waxt Thread, or Shoemaker's End, tie the Wound cloſe together; the reſt of the Stitches ought to be made at equal Diſtances, and ſo near each other as to keep all Parts equally cloſe. They ought alſo to be ty'd in a Bow-knot, that they may be open'd in Caſe of Inflammation or Matter gathering in the Wound, which will ſometimes happen, if the Wound is not ſowed up ſoon after it is received.

The Cure may be finiſhed by dreſſing the Wound every Day with a Pledgit of Hurds ſpread with *Baſilicum*, or any other Digeſtive, waſhing it often with warm Wine, Spirit of Wine, or Brandy.

Wounds that are ragged and uneven.

But in Wounds that are ragged and uneven, any looſe bits of Fleſh or Skin, that cannot again be united, ought to be clipp'd off with a Pair of Sciſſars, and the Dreſſings always made ſo large as to cover the Wound, and not ſink too much into it, for that not only retards the Cure, as it hinders the Reunion, but often cauſes a bad Diſpoſition in the Wound itſelf, which is follow'd with proud Fleſh, hard Edges, *&c.* If the Wound penetrates to the Bone, no kind of Ointment ought to be applied to it, for all greaſy things putrify the Bones; therefore let your Applications to the Bones be only Pledgits of Lint dipt in warm Honey of Roſes mix'd with Tincture of Myrrh, or the Tincture of Myrrh and Aloes, until the Bone is covered; but if the Bone ſhould by any Accident grow foul, the Fleſh ought for the moſt Part to be laid open as far as it is diſcolour'd, otherwiſe it will be apt to cauſe troubleſome Symptoms; and if the Blackneſs does not come off with the Dreſſings, it ought to be ſcrap'd gently, or have a Pledgit of Lint dipt in the Tincture of *Euphorbium* apply'd to it, which will cauſe it to exfoliate, and caſt off the Foulneſs; and after it is become clean, apply Honey of Roſes, *&c.* as above directed.

But

A dexterous and seasonable Application of the Dressings, very material in the Cure of Wounds.

But a very material thing in the managing of all large Wounds, is a dexterous and seasonable Application of the Dressings. A Wound that is much inflam'd, can bear no firm Bandage until the Inflammation abates, which generally happens as soon as it comes to matter plentifully; after that, Bandage will be of the greatest Service, and may be made tighter, as the wounded Part becomes able to endure it; but one thing ought to be carefully observed, that all Wounds must have Time to digest after the first Dressing two or three Days, according to the Size thereof; and when a Wound, or other Swelling, happens near any Cavity, any such Cavity ought always to be filled with Hurds or Bolsters of flaxen Cloth, and kept there with Bandage. In this Respect the following Instance will be of Service.

An Observation.

A Horse was wounded with the Point of a Fork on the outside of the Hough, a little above the Joint, which being a tender sensible Part, occasion'd violent Pain, accompanied with Lameness, and brought such a sudden Flux of Humours towards the Joints, that all the Cavity on each Side and beneath the Master-sinew was swell'd to a prodigious Degree, and in a short time fill'd with Matter; and as soon as the Matter was press'd out of it, it always filled again, which would soon have corroded the Sinew. I advis'd the Farrier, after pressing out the Matter, to fill up the empty Space on each Side under the Sinews, with Hurds dipt in Spirit of Wine, to keep the divided Skin together, and prevent the Matter from falling into it, which, with the Application of a strengthening Charge round the Joint, and an easy Bandage, made a perfect Cure in a few Days.

Internal Wounds, how to be managed.

We shall continue with some Observations concerning inward Wounds, which, in a great measure depends on the right Regulation of a Horse's Feeding; for when a Horse is inwardly wounded, he ought to be restrained from all such Food as is any Ways hard and binding, having nothing allow'd him but scalded Bran, and sometimes a little boil'd Barley. His constant Drink ought to be Barley-water, and at first a little *Sal Prunellæ*, or purify'd Nitre, dissolv'd in it, as has been prescrib'd in a simple Fever. The following Balls may also be given for three or four Days, to secure him from bleeding inwardly.

" Take

" Take *Sperma Ceti* two Ounces, *Japan* Earth, or Bole, " four Ounces, Gum Tragacanth in Powder one Ounce, " Sugar of Lead half a Dram: Let these be form'd into " Balls, being first made into a stiff Paste with Conserve " of Red-roses, and a small quantity of Wheat-flour; one " half to be taken in the Morning, and the other in the " Afternoon, before his Barley-water, keeping him bridled " for the Space of two Hours thereafter.

If the Horse becomes bound in his Body, emollient Clysters may be given him of Mallows, Marsh-mallows, the Herb *Mercury*, the Roots of Marsh-mallows, and such like things, adding no strong Purgative, but rather four or five Ounces of Treacle or Honey, with a sufficient Quantity of Oil or Butter; and if the Guts be wounded, the Use of Clysters must be even laid aside also; and if his Diet prove not enough laxative, he may be provok'd to dung by the following mild Suppository.

" Take a Pound of Honey, boil it in a Pan or Skillet, " until it turns to a dark brown Colour, stirring it always, " then take it off the Fire, and when it begins to be cold, " make it into a Roll four or five Inches long, and intro- " duce it into the Horse's Fundament immediately, other- " wise it will soon dissolve and turn liquid." *Castile* Soap may also be used in Form of a Suppository, when it is necessary to provoke your Horse to dung.

Into the Wound may be poured, or gently injected, red Wine, with Honey of Roses made blood-warm, and outwardly it may be covered with a Pledgit spread with *Basilicum*, or any other proper Digestive, and above that a Compress of flaxen Cloth made into several Folds, bound on with a Bandage, and over all a Cloth with Buckles and Straps, to keep his Body firm. The same Method may also be observ'd in all Wounds that are accompanied with a Fever, only the Balls above prescrib'd need not be given but where there is a great Expence of Blood; and if the Clysters require to be quickened, that may be done by dissolving in them a Handful of common Salt.

CHAP. LII.

Of Gunshot Wounds and Burns.

GUnshot Wounds are distinguished by their Situation, Size, and Figure; some are very dangerous, some altogether incurable, when they happen to penetrate the Brain, or other noble Parts; and those which shatter the Limbs

of

of a Horſe may alſo be look'd on as incurable, ſince a Horſe in that Condition is able to yield no further Service. Their Size and Figure depend upon the Inſtrument wherewith they are inflicted, and alſo renders the Cure more or leſs certain; for a ſmall Wound is more eaſily cur'd than one that is large, and a Wound that is circular and round, made with a Bullet, than one which is ragged and torn, ſuch as happen ſometimes by Splints, Pieces of Iron, Stones, *&c.* but however they differ in theſe reſpects, they are all of them accompanied with Loſs of Subſtance, Contuſion, and bruiſing of the Part; and for this Reaſon no Wounds made by Fire-arms are liable to ſuch great Hemorrhages of Blood, as thoſe made by a ſharp and cutting Inſtrument.

The Cure of Gun-ſhot Wounds. The firſt Intention in the Cure of Gun-ſhot Wounds, is to fetch out the Bullet, or other foreign Matter whereby they are made, but that is not always practicable; for Bullets are oftentimes lodg'd within the Cavity of the Body, and in the thick fleſhy Parts, where the bringing of them out is by no Means to be attempted; and ſometimes after ſeveral Years Habitation, they fall more outwards, and upon Parts of more ſlender Subſtance, and are caſt out by Impoſthumation, or brought away by Inciſion. However, the Practitioner ought at firſt to make Trial, yet not ſo as to tear the Fleſh too much; but if his Endeavours are to no Purpoſe, he ought to make a Counter-opening on the Outſide, towards the Bottom of the Wound, where he ſhall perceive any Hardneſs, nevertheleſs without touching the large Veſſels; and by this Means he may draw out the Bullet with his Fingers, or any convenient Inſtrument; but this Method of Counter-opening is the more neceſſary, and the more immediately to be gone about, when Pieces of Timber, Stone, or Iron, or other extraneous Bodies, lie in the Fleſh, as all ſuch things are apt of a ſudden to cauſe very bad Symptoms, becauſe of their Unevenneſs.

The next Thing to be done in the Cure of Gun-ſhot Wounds, is to bring them to good and laudable Digeſtion, that they may caſt off the mortify'd Fleſh; to effectuate which, nothing can be better than the common Digeſtive, with a ſmall Mixture of Oil of Roſes pour'd into it every Day; let the Wound be alſo often cleans'd with Spirit of Wine, and all the hot and inflam'd Parts about it bathed with the ſame. When the Inflammation is very great, and like to be attended with a Fever, a moderate Quantity of Blood may be taken, and laxative Clyſters adminiſter'd,

and

and a Poultice apply'd of Barley Flour, Fenugreek Meal, and Linseed Meal boil'd in Milk till it be thick, and a sufficient quantity of Ointment of Marsh-mallows to make it moist, adding also an Ounce of Camphire powder'd to every Porringer full of Poultice. This may be apply'd hot twice a Day over the Inflammation, putting only a very short and soft Tent into the Orifice. But if the large Vessels be wounded, and send forth an immoderate Flux of Blood; in that Case, the first Dressing may be made with a soft Tent, dipt in a Solution of the Stiptick Powder, describ'd in the preceeding Chapter; and if the Wound penetrate thro' any Member, both Orifices must be dress'd alike. If the Wound be among the Sinews, or other nervous Parts, Oil of Turpentine, mixt with the common Digestive, may be apply'd to it, bathing it now and then with camphorated Spirit of Wine. The Cautions laid down in the preceeding Chapter are also to be observ'd, with respect to Bandages and Dressings, with this further Notice, that no Gunshot Wound can bear any Bandage, further than to keep on the Dressings, until the Escar and mortify'd Parts are discharged.

Burns.

As to Burns, whether they be made with Gun-powder, or any other way, they ought, in the first place, to be bath'd with Spirits of Wine camphorated, and afterwards anointed with Oil of Roses, St. *John's* Wort, or Linseed Oil, or Butter. If the Burn be new, the Heat and Inflammation may be taken off by applying immediately to the Part pounded Onions; some use the Juice of Onions and Verjuice mix'd together; black Soap and common Salt has the same Effect; there are others who use Quick-lime beat into an Ointment with fresh Butter; but nothing is better, or so safe, as the camphorated Spirits, applying afterwards the following Cataplasm.

" Take Mallows and Marshallows, of each four large " handfuls, Linseed one Pound. Boil them in four Quarts " of Water, until most of the Moisture be dry'd up, pulp " them thro' a Sieve, and add a Pound of fresh Butter, and " three Ounces of Camphire in Powder, mix them all toge- " ther in a Mortar, and smear the Part with it, or apply it " spread pretty thick on a Piece of limber Canvas.

But if the Burn be deep, it must be scarrify'd with a Fleam, and the same Poultice apply'd over it to hasten the Escar, or burnt Parts, to a Suppuration; Bleeding and Clysters may be also comply'd with, when there is excessive Heat and Inflammation, &c.

CHAP.

CHAP. XLIII.

Of a Gangrene and Mortification.

A Gangrene is a ſudden, violent, and exceſſive Inflammation, with intolerable Pain, and is no other than a beginning Mortification.

The Cauſe. The Cauſe is ſometimes from an ill Habit of Body; but, for the moſt Part, from a Puncture, or Wound in the tender ſenſible Parts; or when Splints of Bones, or other ſharp and pointed Matter, ſtick into the Fleſh or Sinews; and moreover the ill Management of any large Wound whatſoever may, and often brings on a Gangrene and Mortification.

The Signs. As to the Signs, beſides the ſudden, violent, and exceſſive Pain, the Part looks of a deep red, inclinable to Purple; whereas in a Mortification, there being an abſolute Stop put to the Blood, the Part becomes black, ſoft, periſh'd, dead, and without Senſe.

The Cure. The Cure, while it is yet a Gangrene, conſiſts chiefly in the Application of ſpirituous things, as Spirit of Wine camphorated, (*viz.* an Ounce of Camphire to every Pint of the Spirits) uſed alone, or mixed with Spirit of Scurvy-Graſs, or Spirit of Turpentine; a Fomentation made as follows, will alſo conduce very much to the Removal of a Gangrene.

"Take St. *John*'s Wort, and common Wormwood, of "each two handfuls, Centaury and Camomile Flowers, of "each one handful, Bay-berries ſix Ounces, common "Aſhes one Pound: Boil theſe in ſix quarts of Water un-"til one half be conſum'd; and to the ſtrained Decoction "add Spirit of Wine camphorated one Quart." Bathe the Wound or the gangreen'd Part with flannel or woollen Cloths dipt in this Fomentation; and after they are wrung out, apply the Cloths almoſt ſcalding hot to the Part; it may be likewiſe waſh'd with the Fomentation, adding a ſixth Part of the Spirit of *Sal Armoniack* at the Time of uſing it.

All things that are proper to promote Sweat are to be taken inwardly, ſuch as have been preſcrib'd to remove Cheſt-foundering, *&c.* But if, notwithſtanding all theſe Means the Gangrene does not yield, the Practitioner muſt with a Fleam or Lancet, ſcarrify to the quick, that the Part may be brought to Suppuration, having in Readineſs Horſe-dung boiled in Ale or Wine, to be applied hot as a Poultice;

tice; and as ſoon as the Wounds come to Matter, they may be clean'd with *Ægyptiacum* made hot; and if there be ſtill a very great Foulneſs and Tendency to a Mortification, the Ointment may be mix'd with Butter of Antimony, which is a very powerful Remedy, or with every Ounce of *Ægyptiacum* may be mix'd ſixty Drops of *Aqua fortis*. *Solleyſell* adviſes Lime-water, and when that proves not efficacious enough, he recommends the following, *viz.*

" Take crude Allum one Pound, *German* Copperas, " groſly beaten, half a Pound, Verdegreaſe in fine Pow- " der three Ounces: Boil all together in a Gallon of Vine- " gar, to the Conſumption of one half; then, without " ſtraining the Liquor, reſerve it for Uſe in a Glaſs Vial; " and if this be too weak, he adviſes two Ounces of *Aqua* " *fortis* to be added to each Quart, ſhaking them well to- " gether.

The Liquor is to be hot, and the Part to be dreſs'd with Pledgits of Flax or Hurds dipt into it.

In all large Mortifications, the Farrier muſt, with a ſharp Inſtrument, cut and extirpate the dead Fleſh, taking Care not to hurt any of the Nerves or Sinews that are ſound or recoverable, either with his Inſtrument or Applications; but let his Application to them conſiſt chiefly of ſuch things as are ſpirituous, dreſſing with Honey of Roſes beat up with the Yolk of an Egg, with a fourth part of camphorated Spirit of Wine; and afterwards all ſuch things as are cleanſing, and proper to promote a laudable Growth of new Fleſh.

CHAP. LIV.

Of the biting of venomous Beaſts.

WOUNDS made by the biting of venomous Beaſts are frequently mortal; for the Poiſon communicated to the Blood cauſes in it ſo ſpeedy a Rarefaction, that the whole animal Frame is put into an immediate Diſorder; The wounded Part becomes ſwell'd, inflam'd, and of a livid Colour, and its Progreſs much more ſudden than any Gangrene proceeding from whatſoever other Cauſe.

The biting of a mad enrag'd Dog, is not ſo poiſonable as is generally ſuppos'd, but only as thoſe Creatures are apt to ſtrike their Jaws with great Force, whereby they ſometimes wound and bruiſe the Sinews and nervous Parts; but the Bite of an Adder is plainly venomous and deadly, from many Inſtances both among Men and Brutes; and the Bites

of

of thoſe Animals are conſtantly followed with a Drop or two of greeniſh Matter, which, by its corroſive Quality, poiſons the Wound, and infects the Body.

The Cure. There are infinite Ways of curing thoſe Bites; ſome give the Fire immediately, and ſome cut out the Bit that is wounded; but theſe Operations cannot be allowed of in all Parts, but chiefly when the Wound is made in the Fleſh, and free from the Nerves and Sinews; others only apply Garlick, Onions, Bay-ſalt, and Bacon, ſtampt together into an Ointment. Others uſe ſtampt Rue, Muſtard-ſeed, pickl'd Herrings, and black Soap, with a ſufficient Quantity of Deers-ſuet, or Bears-greaſe; and there are ſome who only lay over the Wound *Venice*-Treacle or Mithridate, which are very good, eſpecially if the ſpirituous Embrocations directed in the preceeding Chapter, be alſo complied with and uſed often. The Viper-catchers, who are often bit with Adders, cure themſelves by anointing the Wound immediately with Adders Fat, which they always keep in Readineſs in a Gallipot. The Certainty of which Cure has been alſo evinc'd, by the Experiments of a great and eminent Phyſician made upon Dogs, who very reaſonably aſcribes the healing Virtues of that Fat to its clammy and viſcid Parts, but eſpecially as it is more penetrating and active than any other oily Subſtances, whereby he ſuppoſes it to involve, and, as it were, ſheath the volatile Salts of the Venom, which are the Inſtruments of thoſe deadly Miſchiefs that attend the biting of ſuch Animals. And for the ſame Reaſons, the Vipers Fat or Greaſe may, no doubt, be of Service in all other Bites or invenomed Wounds.

But when the Poiſon is once got into the Maſs of Blood, the chief Part of the Cure muſt be owing to inward Means, which ought conſtantly to be uſed at the ſame time proper Applications are made outwardly. *Solleyſell* recommends the Tincture and Eſſence of Vipers, which, indeed, is not improper, only that their Scarcity makes thoſe Preparations very dear in our Country. However, to a Horſe of great Value, a Doſe of two or three Ounces of the Powder of dry'd Adders might be given in a Pint of Canary, and repeated ſeveral Times. But the Method laid down for the Cure of Peſtilential Fevers, as it conſiſts chiefly in the Uſe of Counter-poiſons, may be follow'd in all ſuch Caſes; and as ſoon as the Malignity and Venom is deſtroy'd, the Sores may be treated as other Wounds or Ulcers.

CHAP.

CHAP. LV.

Of Ulcers.

ALL Sores that have any evil Quality ingender'd in them, ſo as to hinder the Re-union of the Parts, are term'd Ulcers; and theſe are diſtinguiſhed according to their Size, Situation, or Degree of Malignity; ſome are ſuperficial, and only appear on the outward Parts; others are deep, and are therefore term'd cavernous or fiſtulous, which Names are borrowed from their Figure. The ſuperficial Ulcers are divers, and attended with divers Qualities, ſome being ſoft and cruſty, ſending forth a viſcid Matter of a cadaverous and Carrion-like Smell, from whence they are alſo call'd putrid; others are fungous, and hard Excreſcences appearing in divers Aſpects; and ſome have hard and ſchirrous Edges, which, in Horſes, are very thick, having their Bottom of a livid or duskiſh Colour, full of little *Papillæ* and Unevenneſſes. The cavernous and fiſtulous are alſo diſtinguiſh'd from each other, the cavernous being deep and broad at Bottom, full of little Holes, with a ſmall and narrow Orifice, from whence there continually iſſueth a virulent corroſive Matter; whereas the fiſtulous Ulcers have long, ſtrait, and deep Holes, which ſometimes communicate with one another like a Coney-burrow, their Sides callous and hard, and the Matter ſometimes corroſive, and ſometimes not. There are other Sorts of Ulcers taken Notice of by the Writers of Surgery, as the Cancerous, Corroſive, *&c.* but the firſt is ſeldom or never to be ſeen in Brutes, and the laſt ſeems not to be a proper Name of Diſtinction for any particular Kind of Ulcer, that being an evil Quality which is more or leſs to be met with in moſt Ulcers, and by which they may be look'd upon to be more or leſs malignant.

In what manner Ulcers are diſtinguiſh'd.

Ulcers are alſo diſtinguiſh'd, with reſpect to their Cauſes, whence ſome are called *primitive*, and others *degenerate*; but it is ſufficient for the underſtanding this Matter, to know, that all Ulcers take their Origin immediately from Wounds, Bruiſes, Tumors, or other Eruptions and Breakings out of the Skin, ſome of which turn Ulcers by ill Management, and others from a vicious Diſpoſition in the Blood.

As to the Signs, they are manifeſt from what has been already ſaid of their ſeveral Kinds; we ſhall therefore make ſome few Obſervations concerning their Prognoſticks.

The Prognosticks and Cure.

And *First*, An Ulcer that is superficial, is less dangerous than one that is deep, as it may, for the most part, be cured by manual Operation, only with the Assistance of proper Applications: Neither need I acquaint any one, that a small Ulcer is more easily manag'd than one that is large. But, *Secondly*, An Ulcer proceeding from a Malignity in the Blood, *&c.* whether it be large or small, superficial or deep, is more dangerous than one which is only degenerate, and not attended with such bad Circumstances. And *Thirdly*, As a degenerate Ulcer may, by long Continuance, create an evil Disposition in the Blood, by hurting the common and ordinary Secretions, and inducing an ill Habit, it may therefore be as dangerous and bad to cure as any; and a sudden and injudicious Cure of such an Ulcer, is oftentimes the Cause of some other Disease. *Fourthly*, Ulcers that are form'd of Abscesses in the Hips, Loins, in the thick Part of the Shoulders under the Blade-bone, and in the Joints, and have Communication with the Bones, as these lie out of Reach, they are therefore very difficult and hard to be cur'd; and if the Cavities of such abstruse Ulcers be large, they will soon bring the Body of a Horse into a Waste. *Fifthly*, Ulcers in the dependent Parts, as those of the Legs, are very obstinate, as they become the Sink and Drain of all the Humours, but especially as the Matter proceeding from the Tendons, *&c.* creates a very ill Disposition in them. *Lastly*, All Ulcers in the Lungs, Kidneys, Liver, and other inward Parts, generally prove mortal, sooner or later, according as they are situated nearer, or at a Distance from the larger Vessels, and according to the other Circumstances that may attend them. But we have already taken sufficient Notice of those kind of Ulcers, where we have treated of broken-winded and consumptive Cases, and of Hectick Fevers, *&c.* having recommended, for their Cure, the Use of cleansing, healing, and balsamick Medicines inwardly, with a proper Regulation in the Feeding and Exercise. As to outward and superficial Ulcers, with their different Accidents, they have been also sufficiently handled in the forty eighth Chapter, both as to Externals and Internals. The Ulcers of some particular Parts have likewise been taken notice of, as the Glanders, *&c.* Those of the Legs and Feet, and other dependent Parts, shall be treated of when we come to the Diseases of those Parts. It remains therefore that we put a Period to this Subject, by laying down some Directions concerning the Cure of those Ulcers

that

that are term'd cavernous and fiſtulous, and likewiſe ſuch of them as are abſtruſe, and form themſelves into ſeveral Meanders and hidden Abſceſſes among the Bones and fleſhy Interſtices, tho' in the latter Circumſtances we can give the Practitioner but little Hopes of Succeſs, for the Reaſons already alledg'd; yet ſo long as a Horſe continues ſerviceable, the proper Means ought to be uſed.

And therefore, whether ſuch an Ulcer proceed from an old deep Wound, or any other Cauſe, the chief thing to be done, is now and then to inject proper Liquors into it, forbearing the uſe of thoſe things that are very corroſive; for albeit corroſive Applications are ſometimes proper in Ulcers that are ſuperficial, and where the Eſcar can be brought off by the proper Dreſſings, or the Help of an Inſtrument, and where a freſh Growth of ſuperfluous Matter can be ſuppreſs'd by Bandage; yet in the Caſe now before us they are often hurtful, as all ſuch Applications cauſe Accidents that ought to be remedied by Art, and ought therefore to be within the Reach of the Artiſt; for which Cauſe, the propereſt Liquors to be injected into all ſuch Ulcers, are Decoctions made of the Roots of Briony, Birthwort, Flower-de-luce, *&c.* with a third Part of Spirit of Wine; or rectify'd Oil of Turpentine, common Honey, or Honey of Roſes, may be alſo made uſe of in the ſame Intention; and when there is a Foulneſs in the Bones, which may be known by the Thinneſs, Oilineſs, and Stench of the Matter; in that Caſe, a Tincture drawn with Wine from Myrrh, Aloes, Frankincenſe, Olibanum, Saffron, Cinnamon, and ſuch like things, will make a very proper Injection to be uſed ſometimes. To the Wound may be applied Pledgits of Flax dipt in the ſame Liquor, or ſome good Digeſtive, and over the Dreſſing a good ſticking Plaiſter. The Injections ſhould be always made warm; and when the Part can admit of firm Bandage, it will never fail to be of Service.

But thoſe Ulcers, which, upon Trial with the Probe, *&c.* are found to be within the Reach of an Operation, ought to be laid open, avoiding, as much as poſſible, an Effuſion of Blood, by dividing the large Veſſels, and the Inconveniencies that may happen by cutting the nervous and ſenſible Parts: After Inciſion, any ſuch Ulcer is to be treated as a freſh Wound, only that inſtead of a Re-union, by cloſing the Sides again, they muſt be kept open with Doſſils of Flax dipt in Stiptick-water the firſt Dreſſing, and afterwards in ſome good Digeſtive, that Nature may fill up

the whole Space with the Growth of new Fleſh. If there be ſtill a bad ulcerous Diſpoſition in the Part, cleanſing Ointments, as *Baſilicum* mixt with red Precipitate, or *Ægyptiacum*; or, if neceſſary, ſtrong Corroſives may be made Uſe of; Copperas-water, Lime-water, or a Solution of Blue Vitriol, or any of thoſe directed in thoſe Parts of this Treatiſe in the like Intentions, may be alſo comply'd with to waſh the Sore; if the Bone be foul, the Method laid down in the 51ſt Chapter ought alſo to be followed. In a Fiſtula, the hard callous Sides muſt be ſcarrify'd, or touch'd with a Cauſtick, to bring them even and ſmooth. The Horſe may be alſo purg'd once or twice, and afterwards go under a Courſe of the Antimonial or Cinnabar-Balls, *&c.* but the Reader may conſult the 48th Chapter.

CHAP. LVI.

Of Cauterizing, and giving the Fire.

CAuterizing is perform'd by an Inſtrument made hot, or by corroſive and burning Medicines; and theſe are either natural, or artificial, which may be made ſtronger or weaker, according to the ſeveral Intentions in which they are uſed. The firſt is called the *actual Cautery*, and the laſt the *potential.*

We make uſe of corroſive and burning Medicines to cleanſe and deſtroy all Foulneſs which obſtructs and hinders the Cure of any Ulcer, to keep down a preternatural Growth of fungous Fleſh, to eat away Excreſcences, to open Abſceſſes and Impoſthumes, and moreover to ſtop up the Mouths of Blood-veſſels, thereby to prevent an Hemorrhage of Blood. The actual Cautery is alſo made uſe of to moſt of the ſame Purpoſes; but as we have taken Notice of theſe things already, and reduced them to Practice, with the neceſſary Cautions in their Applications; we ſhall not therefore ſpend the Reader's time in repeating them over again, but proceed to the other Intentions of Cauterizing, which in a more eſpecial Manner go under the Denomination of *Giving the Fire.*

The Fire is ſo ancient in the Practice of Surgery, that it ſeems to have been one of the firſt Methods uſed to remove Pains of the Joints, *&c.* proceeding from cold glutinous Humours impacted in them, as may be learn'd from *Hippocrates* and others; and tho' it be now greatly in diſuſe among us in theſe Intentions, yet it is to this Day very much practic'd by the *Egyptians* and *Arabs*; and it is reported of

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the *Moors*, and other *Barbarians*, that they ſear their Arms and Shoulders, only to ſtrengthen them to draw the Bow. The ancient Method was by burning Flax or Cotton under the diſeaſed Member made into a Pyramidal Form, that the Part might be inured to it by degrees, and ſo enabled to bear a neceſſary Augmentation of the Flame. And Sir *Wm. Temple* had ſeen ſuch good Effects from it, that encouraged him to write his Eſſay concerning the Cure of the Gout by *Moxa*, which is only a kind of *Cotton* ſet on Fire in this Manner.

The Uſe of the Fire.

But whatever Approbation may be given to this Method of curing Diſeaſes in the human Body, it is certain the Effects of Fire are very extraordinary with regard to Horſes in old Griefs in the Joints, Sinews, and nervous Parts, after they have bid a Defiance to all artificial Compoſitions whatever; neither will this be thought ſtrange, if it be conſider'd, that thoſe Parts are very compact and ſolid, being compos'd of an infinite Number of Fibres and nervous Threads laid ſo cloſe together, that there is not a Cavity or Interſtice to be diſcerned in them when cut aſunder; and therefore when theſe are obſtructed, nothing can be ſuppoſed to relieve them, but what is of the moſt powerful Efficacy.

Now it is very plain, that actual Fire may be of the greateſt Importance in the removing ſuch Obſtructions, and that in a twofold Reſpect; *Firſt*, As by cauterizing and burning the Outſide there is a Diſcharge made, and of Conſequence a Derivation of Matter from the obſtructed Part, which muſt give more Liberty to the incloſed Fluid; and *Secondly*, As the Heat, communicated in this Manner by the active Particles of Fire, muſt needs give a Sort of new Life and Motion to the viſcid Juices, which are thus compacted, whereby they become more fitted to make their Way thro' their proper Vents and Paſſages, and likewiſe as it forces the relaxed Fibres to contract themſelves.

This is ſo certain an Effect of Fire, that it is even plain in thoſe Inſtances, where many of the poorer Sort among the Country People cure themſelves of the Kibes, *&c.* by holding their Heels over burning Coals, or a hot Pair of Tongs, tho' they do not ſear the Skin, and many of the good Effects which proceed from the Application of Ointments to hard obſtinate Swellings and aching Pains in Horſes, are more owing to the hot Bar of Iron made uſe of in the rubbing in of the Ointments, than any medicinal Efficacy in the Ointments themſelves, ſeveral of theſe being no better than common Hogs-lard.

And as the Fire becomes more useful in all such Intentions, by removing settled Obstructions, so it is of no less Importance in *Ring-bones*, *Quitter-bones*, *Scratches*, and, in fine, to loosen all grisly and horny Excrescences that grow out upon the Legs and Feet, or any other Part of the Body, where, by searing their Substance, and piercing the Skin near the Root or Insertion, a Stop is put to the Humours that nourish them, so that they are made to rot and fall off.

The Manner of giving the Fire.

Solleysell lays down three important Directions in giving the Fire. The *first* is, not to press too hard upon the Part. The *Second*, To let the Knife be red-hot, but not flaming. And the *Third*, To heat the Knife or Instrument in a Charcoal Fire. The two first of these Directions are absolutely necessary, and the last may be comply'd with according to the Artist's Conveniency.

In all Griefs of the Sinews and nervous Parts, the Fire is to be very sparingly given, and a drawing Knife is certainly the propereſt Instrument, though there are some who make use of a large Gold Coin, from a Conceit of its having greater medicinal Virtues than really belong to it. Some content themselves with Silver, and there are others who prefer Copper, from an Opinion of its being a Metal that resists Putrefaction; and among these is our last mentioned Author. But most of our *English* Farriers make use of Iron Instruments in all their cauterizing Operations, which, if they be smooth and well polish'd, are as good as any, and in this it is sufficient that they have the Example of most Surgeons for their Authority.

The Knife should be rounded on the Edge, and pretty thick, that it may keep the Heat as long as possible; it ought also to be heated in a very clear Fire (if a Charcoal Fire cannot be had) and afterwards rubb'd upon a woollen Cloth, that no Dirt or Ashes may stick to it, and until the flaming Redness is wore quite off; then the Farrier must, with a steady, dexterous, and light Hand, draw his Lines or Rases on each side the Joint or Sinew, always following the Course of the Hair, without making cross Lines, for, besides that they are of no Importance in the Cure, they cause a very great Deformity. A due Care must also be had, never to pierce the Skin, but rather repeat the Strokes the oftner, until it becomes of the Colour of a pale Cherry; for if the Fire happens to touch the Sinews, it will be apt to cause Convulsions; and if the Horse survive these Disorders, he may hereafter become irrecoverably lame.

But

But when the Grievance happens to be on the Hips, Shoulders, or other fleshy Parts, or when the Fire is given to disperse any obstinate flegmatick Humour, that cannot be brought to Suppuration, the Artist may go on with some Boldness; and besides, that the Lines may be made of any Figure, either in shape of a *Palm*, *Arrow* or *Shield*, or what the Farrier pleases; the Skin ought also to be pierc'd more or less, according to the Situation and Urgency of the Grievance, that a powerful Revulsion may be made, by drawing away a plentiful deal of Matter. There are many Instances of Cures of this kind to be met with among Horses, and even some in the human Body, where, by burning the Hip with a hot Iron, the *Ischiatick* Pains, and other nervous Obstructions, have been altogether removed. But in Cases where the Skin is to be pierced, it ought to be done from below upwards, that the Matter may flow downwards, the better to prevent an ulcerous Disposition in the Sores; and into the Orifices or Holes may be introduced little soft Tents of Flax dipt in warm *Basilicum*, or any other suppurative Ointment; for if this be cramm'd with hard Tents, the Anguish that must necessarily happen after giving the Fire, will be apt to create a Fever.

All the sear'd and burnt Parts ought immediately to be bath'd with Spirit of Wine, and afterwards anointed with a Mixture of Bees-wax and Oil melted together, or with common Tar, until the Escars fall off; but if there be a very great Heat and Anguish, and a Tendency to a Swelling, which is apt enough to fall upon the Legs, especially of those Horses that are tender and washy, in that Case, camphorated Spirits may be used two or three times a Day, and, if need require, the Cataplasm directed for the Cure of Burns. But these Accidents may in a great Measure be prevented, and the whole Intention more effectually answered, if, before the Operation, Recourse be had to Fomentation and Baths, or attenuating Oils, or such as the Oil of Earth-worms, or the Soldiers Ointment; for by these Means the Grievance will more easily yield to the Impressions of the Fire, and the burnt Parts come sooner to a Suppuration.

I need not acquaint any one, that the Horse must be secur'd with Collars, or such other Engines as can be made effectual to prevent his licking, biting, or rubbing the Scabs, which is very common when they begin to heal, otherwise it will cause a great Deformity, and such an one as cannot be easily remedied. What relates to the firing of *Ring-*

bones, *Quitter-bones*, and *Scratches*, &c. ſhall be treated of in their proper Places.

CHAP. LVII.

Of Rowelling.

ROwelling is an artificial Vent made to diſcharge noxious Humours; but the Effects of Rowelling are not the draining away of ill Humous, as moſt People believe; for the Matter that proceeds from the Rowel is form'd of the Blood; ſo that by it both the good and bad is evacuated: And therefore all that can be propos'd by Rowelling, is to make a Revulſion or Diverſion from any Part that is weaken'd or relax'd by old obſtinate Obſtructions; and in this Senſe it is uſeful in many of the ſame Intentions as the Fire, and is very profitable in all Aches, cold phlegmatick Swellings, and even ſometimes in Lameneſs and Infirmities of the Legs. It is alſo ſometimes a Relief, where there is a Fulneſs and Redundancy of Humours; and in moſt Diſeaſes of the Eyes: But Rowelling is abſolutely hurtful to Horſes that are poor, lean, and hide-bound, or to thoſe that are hectick and conſumptive, *&c.*

The Uſe of Rowelling.

There are two ſorts of Rowels, *viz.* A hair Rowel, and *French* Rowel. The one is what Surgeons call a *Seaton*, and the other a *Fonticle* or *Fontanel*; but the *Fonticle* or *French* Rowel is by many preferr'd, as it is not ſo apt to cauſe an Abſceſs, and is therefore more eaſily dry'd up: But in Caſes that require a conſiderable Diſcharge of Matter, a ſmall Abſceſs is not to be altogether feared, becauſe ſuch an one as happens upon Rowelling, may be eaſily enough cured by the Application of Bolſters and tight Bandage.

I need not lay down any particular Directions concerning this Operation, ſince it is ſo common, that even every Country Smith can perform it; I ſhall only take Notice, that the *French* Rowel ought always to be put in the Interſtices or Furrows that go between the Muſcles, either towards their Origin or Inſertion, or any other Part throughout the whole Tract of any Interſtice; but to prevent a too great Abſceſs, the hair Rowel may be better plac'd towards the lower Part of the Interſtice, where the Furrow is not ſo deep, and where the Matter will eaſily run off; but Care ought to be taken not to put in the Rowel too near the Tendons, but where there is ſome Subſtance of Fleſh.

CHAP.

CHAP. LVIII.

Of Gelding and Curtailing of Horſes.

THE Gelding of a Foal is an eaſy Operation, and ſeldom attended with any ill Accident. But if a Horſe's Stones ſhould be bruis'd, or otherwiſe hurt, and ſo become irrecoverable, the extirpating of theſe will require the Skill of a good Artiſt.

The Horſe being firſt caſt on a Dunghill, or other ſoft Place, the *Scrotum*, or outward Caſe, is to be cut open on each Side, where both Stones are to be taken away; and where there is but one, that Side where the diſeaſed Stone lies; afterwards tie a waxt Thread round the Strings, to ſtop the Blood, and with a Pair of ſharp Sciſſars or Knife, cut the Strings between the Ligature and the Stone, applying to the Wound Pledgits dipt in the common Digeſtive mix'd with Spirit of Wine, laying over all Compreſſes and a Bandage, ſuch as has been directed to ſuſpend the Sheath. If an Inflammation happens, it is to be treated with warm Fomentations and ſpirituous Things, and the Horſe kept to an opening Diet, with Barley-water for his Drink.

This is a more ſafe Method than what is generally practis'd, *viz.* by applying the actual Cautery, and then filling the Place with Salt; for albeit it may ſucceed with a Colt or Foal, while the ſpermatick Veſſels are very ſmall, yet it muſt needs expoſe a Horſe to many Accidents when he is come to his Maturity.

Curtailing.

As to the Curtailing or Docking of Horſes, all that I intend upon the Subject, is only to advertiſe the Farrier, that his Searing-Iron ſhould be ſmoother and better poliſh'd than what is generally made uſe of, and that it ſhould be rubb'd very clean on a woollen Cloth, and the Metal harden'd, for when it is otherwiſe, the *Scoria*, or Sparks that fly off from the Iron, are apt to cauſe an intolerable Anguiſh, which falls down into the Fundament and Sheath: Neither ſhould the Iron be at any time apply'd flaming hot, or elſe it will bring the burnt Part along with it; for want of this laſt Caution, I have ſeen the Iron apply'd two or three times before an Eſcar could be form'd, which is always of bad Conſequence, as it muſt be a conſiderable Time before the Bone is covered.

CHAP.

CHAP. LIX.

Of the Lampas.

THE Lampas is an Excreſcence in the Roof of the Mouth, which hinders a Horſe from Feeding, and happens uſually to young Horſes. It is cur'd by applying a hot Iron made for that Purpoſe, and it is ſucceſſively performed in all Parts of the Kingdom; ſo that there is no need of any Caution, but only that the Farrier do not penetrate too deep, ſo as to ſcale the thin Bone that lies under the upper Bars, for that would be attended with very troubleſome and dangerous Symptoms.

CHAP. LX.

Of the Barbs.

THESE are ſmall Excreſcences under the Tongue, which may be ſeen by drawing the Tongue aſide; and are conſtantly cur'd by cutting them off as cloſe as may be, with a Pair of Sciſſars, and rubbing the Place with Salt.

CHAP. LXI.

Of the Tick.

THO' we find this among the Diſeaſes of Horſes, yet it is, by the beſt Judges, look'd upon to be an ill Habit, rather than a Diſeaſe, which may probably at firſt proceed from the Pain and Itching that happens in the Breeding of Teeth. There are divers Methods uſed to break a Horſe of this Habit, but the moſt approved is, to make him eat in a Place where there is no Manger, tying him with a Buckle to the Wall, and giving him his Oats in a Haverſack.

CHAP. LXII.

Of Wolves Teeth.

THIS is a Diſtemper which happens to Horſes in the Decline of their Age, when the Gums are worn down; the Grinders don't meet one upon another, but grow either outwards or inwards, ſo that their Points prick the Gums or Tongue, and hinder a Horſe's Feeding. The uſual Method of Cure is to open the Horſe's Mouth with the Upſet, and with a Gouge and Mallet ſtrike off thoſe ſharp Edges, and afterwards file them down ſmooth; but it is much ſa-

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fer to make uſe of a well temper'd File only, though it will take a little more Time.

CHAP. LXIII.

Of Gigs, Bladders, and other Diſeaſes of the Mouth.

THE Mouths of Horſes are ſubject to ſeveral Infirmities, which, by Reaſon of the Softneſs and Sponginess of the Parts, are often troubleſome, and cannot be eaſily remov'd without the Fire, or ſome corroſive Medicine. The Gigs and Bladders, for the moſt part, grow out on the Inſide of the Lips, and ſometimes towards the Palate; but thoſe of the Lips are the largeſt. The uſual Method of Cure is by ſlitting them open, and diſcharging the Matter, afterwards waſhing them with Salt and Vinegar. Sometimes a Horſe's Mouth is wounded by a miſhapen or ruſty Bit, and by ſeveral other Accidents; all which, either from Neglect, or an ill Diſpoſition in the Blood, will create thoſe ſort of Ulcers the Farriers call *Cankers*. In ſuch Caſes, the beſt way is to make uſe of a ſmall round Searing-iron, moderately heated, which may be introduced through a Braſs Pipe, to defend it from touching any other Part; and when the Eſcar falls off, it may be touch'd now and then with a Sponge dipt in Copperas-water, until it is cured. The falling down of the Palate, or, more properly, the Relaxation and Swelling of the *Uvula*, is alſo a Diſeaſe to which Horſes are ſubject upon catching cold, tho' I do not find it much taken Notice of by Farriers; yet Mr. *Snape*, in his Anatomy, ſays, he has met with it ſeveral times. The Cure is by blowing Pepper upon it, or touching it with a Feather dipt in the blue Eye-water, or Spirit of *Sal Armoniack*, &c.

CHAP. LXIV.

Of the Poll-Evil.

THE Poll-Evil is an Impoſthume which ariſes on the Poll, and, for the moſt part, is cauſed by the fretting of a new Halter or Collar, *&c.* At firſt it requires no other Method of Cure than what is common to other Biles and inflam'd Tumors, *viz.* by ripening and bringing it to Matter; but ſometimes it degenerates to a ſinuous Ulcer, tho' that be generally owing to want of Skill.

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There is a ſmall *Sinus* under the Noll-bone, where the Matter is apt to lodge, unleſs Care he taken to keep the Part firm with Bandage; but inſtead of that, the Farriers generally uſe to thruſt in a long Tent, which raiſes the Fleſh, and opens a Way into the *Sinus*; and by this means an Ulcer is created where there needs be none; all therefore that is further neceſſary on this Head, is to caution the Practitioner againſt ſuch ill Methods; and if the Tumor has a very large Cavity within it, it is much better to lay it ſomewhat open, than to thruſt foreign Subſtances into it; and if it requires an ulcerous Diſpoſition, it muſt be treated as ſuch. But the Reader may have Recourſe to the 55th Chapter, as alſo to thoſe Places where we have treated of the Strangles, *&c.*

CHAP. LXV.

Of Hurts and Bruiſes in the Withers, &c.

HORSES are very often hurt, or wrung in the Withers, by the Biting of other Horſes, or unfit Saddles, eſpecially when the Bows are too wide, for by that Means they bruiſe the Fleſh againſt the Spines of the ſecond and third *Vertebræ* of the Back, which form that Prominence which riſes above their Shoulders. When the Swelling is moderate, the uſual Method is to waſh the Part with Salt and Water, or to apply Horſe-dung, or Salt and black Soap mix'd together, which very often ſucceeds; any reſtringent Charge, as Bole and Vinegar, with Whites of Eggs, has the ſame Effect, tho' in a different Manner; as alſo the Whites of Eggs beat up into a Foam with a Piece of Allum. This is very much commended.

Sometimes the Hair is rubb'd off, and the Part becomes gall'd, in which Caſe nothing is preferable to the rectify'd Spirit of Wine, or Brandy, which ought to be uſed often, covering the Part with a flaxen Cloth dipt in Bees-wax, and a little Oil melted together to keep the Dirt from it, and defend it from the Air. But when the Bruiſe happens to be violent, an Impoſthumation may certainly be expected, which muſt be manag'd according to the Directions laid down in the Cure of the Strangles. And as ſoon as the Matter is diſcharg'd, and the Swelling fallen, ſo that the Part can bear to be bound, a Strap may be fixed to the Breaſt-cloth, which may paſs between his Fore-legs, and be faſten'd to his Surſingle, which, in a great Meaſure, will anſwer the End of Bandage, by keeping the Parts firm.

The Cure.

Solleyſell

Solleysell complains of the ill Accidents attending the Disorders in the Withers, and it is no Wonder, for that Author was always too busy with Tents, and but little acquainted with the true Use of Bandage. A Tent in the Withers is very dangerous, and in all Parts of the Back and Loins; for by them the Flesh is raised, as was observed in the preceeding Chapter, and the Matter becomes collected among the Spines, whereby sinuous and fistulous Ulcers are form'd, which for the most part prove incurable.

Bite on the Withers.

As to those Ailments that proceed from the Bite of another Horse, whether they be on the Withers, the Neck, or any other Part of the Body, they must be often bath'd with Spirit of Wine, and dress'd with Turpentine and the Yolks of Eggs, as all other Wounds and Impostbumes; and if the Bruise cause a small Mortification and Deadness in the Part, which sometimes happens, it may be dress'd with *Ægyptiacum*; and if it prove obstinate, the actual Cautery may be made use of to bring it to Digestion; after which it may be manag'd as a simple Wound or Ulcer.

CHAP. LXVI.

Of a Navel-gall, &c.

A Navel-gall is seated on the Top of the Spine, opposite to the Navel, from whence it has its Name, and is generally caused by a bad Saddle pinching a Horse behind, which being neglected, turns to a foul fungous Excrescence; and sometimes, after long Continuance, to a sinuous and fistulous Ulcer; sometimes it looks like a hardened brown Jelly, and sometimes black and mortify'd. While there is Moisture and Sensibility in the Part, an Ointment may be apply'd of Quicksilver and Turpentine, *viz.* an Ounce of Quicksilver to every two Ounces of Turpentine, rubb'd in a Mortar till they be well incorporated, and then spread upon Hurds or Flax: On each side of the Spine, over the Swelling, may be laid smooth dry Pledgits of Hurds, or Bolsters of flaxen Cloth, which may be girt round with a Surfingle. But if the Sore be dead and lifeless, a good sharp Razor or Knife may be made use of to cut it to the Quick, and then let it be dress'd according to the Directions laid down in the Cure of Wounds, *&c.*

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A Sitfaſt. A *Sitfaſt* proceeds alſo from a Saddle-gall, and is another of the Accidents that happens to the Spine; it is dry and horny, and may be cur'd by anointing it firſt with Oil of Bays, until it turns ſoft, and then by dreſſing it with Quickſilver and Turpentine, as above directed, which alone will make a Cure, eſpecially if the hard horny Subſtance be gently ſcarrify'd in ſome Places.

CHAP. LXVII.

Of a Shoulder-wrench, Shoulder-pight, and Shoulder-ſplait.

TO underſtand the Nature of theſe Infirmities, it will be neceſſary to remember, that the Blade-bone of the Shoulder is fixed to the Body, not by Articulation or Jointing, but by Appoſition, being laid to the Ribs, and faſten'd by the Muſcles which lie under and above it; ſo when a Horſe happens to receive a Blow or Strain in the Shoulder, the Tendons of thoſe Muſcles are ſtretched and relaxed; and when that is violent, it is called a *Shoulder-ſplait*, and becomes more or leſs dangerous, as the Horſe is more or leſs hardy.

Every one ſufficiently knows, that a Slip, falſe Step, or any undue Poſition of a Horſe's Legs, will ſtrain and weaken the Shoulder, by ſtretching thoſe Ligaments; and ſometimes the Shoulder is affected by a Hurt or Bruiſe on the Withers, the Reaſon of which may be eaſily enough conceiv'd, by any one who will examine into the Structure of theſe Parts; but when the Accident proves not ſo violent as to ſhew a Looſeneſs and Swelling, it is not eaſily diſcerned whether the Lameneſs be in the Shoulder, in the Foot, or any other Joint. The beſt Judges have therefore in all ſuch Caſes, thought it proper to examine all Parts from the Shoulder downwards, and even to unſhoe the Horſe, that they may know certainly where to apply their Remedies. But the Infirmities of the Shoulders may be diſtinguiſhed from thoſe of the Feet, by having a Horſe put to Exerciſe; for if the Lameneſs be in the Feet, he will halt moſt when he is ridden; but if it be in the Shoulder, the warmer he grows the leſs he will halt; and, if the Wrench be violent, he will be apt to caſt his Legs outwards, forming a Circle as he goes. But if none of theſe Signs are perceivable in his Gait, the ſureſt Way is to turn him

him ſhort on the lame Side, for that tries the Muſcles the moſt of any thing; ſo that if the Grief be in the Shoulder, he will ſet his Foot on the Ground hardily, and endeavour to favour his Shoulder.

The Cure.

But in order to the Cure, a Diſtinction ought to be made between an old Grief, and a Hurt that is newly receiv'd; for, in a freſh Strain, the firſt Intention is to apply ſuch things as are proper to allay the Heat and Inflammation, and prevent a too great Flux of Matter to the Part; whereas in an old Grief, thoſe Things are chiefly made uſe of that attenuate, and render the ſuperfluous Humours fit to paſs through the Pores; and therefore, as ſoon as you perceive your Horſe lamed in the Shoulder, by a Fall, or any other Accident, after he has been bled on the oppoſite Side, a cold reſtringent Charge may be apply'd, of Vinegar, Bole, and the Whites of Eggs, Verjuice may be uſed inſtead of Vinegar upon the Road, which may be had at any Farm-houſe; for the ſooner a cold Application is made, the better. The Part ought, in the Beginning, to be refreſhed three or four times a Day, with a Sponge dipt in Vinegar and Bole; and after that, the following Plaiſter may be apply'd.

" Take common Pitch half a Pound, *De Minio* Plaiſter " or a Diachylon, ſix Ounces, common Turpentine four " Ounces, Oil Olive two Ounces: Melt them together " in a Pipkin over hot Embers, continually ſtirring; and " when theſe are diſſolved, add Bole in fine Powder four " Ounces, Myrrh and Aloes, of each an Ounce. Spread " this upon the Horſe's Shoulder before it grows cold, " and put fine Flokes of the Colour of the Horſe all " over it.

But when the Lameneſs happens to be of an old ſtanding, the following Ointment will be of great Service.

" Take of the Soldiers Ointment, or Nerve-ointment, " half a Pound, Ointment of Marſh-mallows ſix Ounces, " rectify'd Oil of Amber four Ounces. Mix them all to- " gether, and with a hot Bar of Iron held as near as poſ- " ſible, chafe the Part twice a Day; and at ſome Inter- " vals with camphorated Spirits.

The Soldiers Ointment is made as follows.

The Soldiers Ointment.

" Take freſh Bay-leaves three Pounds, " Rue two Pounds and a half, Marjoram " two Pounds, Mint one Pound, Sage, " Wormwood, Coſtmary, Baſil, of each half a Pound, " Oil Olive twenty Pounds, yellow Wax four Pounds, Ma-

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" laga Wine two Pounds." Bruiſe all the Leaves, and boil to the Conſiſtence of an Ointment, and keep it for Uſe. This may be made in a ſmaller Quantity by thoſe who keep but few Horſes.

Solleyſell recommends the Ointment of *Montpelier* as an excellent Remedy in all Strains of the Shoulders, *&c.* It is compoſed of the Ointment of Roſes, Marſh-mallows, Populeon, and Honey, of each equal Quantities. The Oils of Turpentine, Earth-worms, Oil of *Petre*, St. *John*'s-Wort, Nerve-oil, Bears-greaſe, Horſe-greaſe, Mules-greaſe, Deers-ſuet, Badgers-greaſe, and many ſuch things, are alſo uſed in the ſame Intention. But if the Lameneſs does not yield to theſe things, Recourſe may be had to Rowelling, or to the Fire; but the laſt is preferable, and leſs painful than the uſual Method of Rowelling, by bruiſing and blowing up the Shoulder.

And therefore, with a hot Iron, make a Circle the Breadth of a Trencher round the Joint, and within the whole Circle pierce the Skin, leaving about an Inch between the Holes, and to each apply yellow Wax and Roſin melted together until the Eſcars fall off, and then dreſs them every Day with Turpentine and Honey, applying Plaiſters as directed, until the Sores are dried up.

Some adviſe ſwimming a Horſe for a Shoulder-ſplait, from an Opinion of the Joint being out; but if it was really ſo, he muſt ſwim with three Legs, which is almoſt as impoſſible as for a Door to move without Hinges. But yet Swimming is not always unſucceſsful; and in all old Griefs, it becomes ſerviceable in the ſame Manner as a Cold Bath, by helping Perſpiration, and giving a more lively Motion to the obſtructed Matter; and therefore the Morning is the propereſt Time, becauſe the Water is then the coldeſt, and it ſhould be a continual Cuſtom for ſome time, to do effectual Service.

But in all other Reſpects, the Horſe ſhould be put to no kind of Labour, neither ought any one to ride him; for a Weight upon his Back muſt needs add to the Infirmity, as the greateſt Streſs lies upon the Shoulders; but it will be very proper for him to be walk'd out every Day, when the Weather is favourable; and his Exerciſe may be increaſed as his Shoulder recovers Strength: A Patten Shoe may alſo be ſet upon the oppoſite Foot, if he leans too much upon it.

CHAP.

CHAP. LXVIII.

Of a ſway'd Back, and Strains of the Hips.

A Swaying of the Back, is a Pain and Weakneſs in the Reins, cauſed by a Fall, the carrying of ſome heavy Burden, or ſome other violent Accident, and ſometimes the Horſe is alſo hurt inwardly, which brings him into the greateſt Diſorders imaginable; yet I am of Mr. *Snape*'s Mind, that there is no ſuch a thing as a broken Back, in the Senſe the Farriers generally mean, otherwiſe the Horſe could not ſurvive it many Minutes: Neither is it very probable that the Spines or Proceſſes of the Rack-bones ſhould be often broke, unleſs the Horſe be very poor and lean, theſe being, for the moſt part, very well guarded by the thick Muſcles of the Back; and therefore, by a Swaying of the Back, is properly to be underſtood a ſtretching and Relaxation of the Muſcles and Ligaments of thoſe Parts; and when the Hurt is more inward, the Malady muſt then conſiſt in the ſtretching of the large Blood-veſſels, *&c.* But in all ſuch Caſes, the Farrier ought, in his Cure, to treat a Horſe as if he was hurt both inwardly and outwardly, as there is a conſtant Simpathy between both.

The firſt thing therefore to be done, is to take a plentiful deal of Blood from the Neck; after which, the cold Charge, and the other Remedies preſcrib'd in the preceeding Chapter, ought to be apply'd inwardly thoſe things that are proper to promote Sweat; and, as Mr. *Snape* adviſes, he may be ſweated in a Dunghill, if the common Remedies fail; his Diet muſt be opening, and all imaginable Care taken to keep down a Fever. He ought to be girt pretty firm over his Reins, yet not ſo as to hinder the Motion of his Flanks; he ought alſo to be hung up, or kept in a ſteady Poſture: But if the Weakneſs continues, you may proceed to the Fire, which muſt be done by piercing the Skin on the Muſcles that lie on each ſide of the Spine, avoiding, as much as poſſible, to burn him near the Flanks, otherwiſe it will be apt to create a violent Swelling in the Sheath, which would very readily bring on a Fever.

The Strains in the Hips are to be accounted for in the ſame Manner as thoſe of the Back and Shoulders, only they are not ſo apt to create a Fever, as a Swaying of the Back. Sometimes the round Head of the Thigh-bone is, by the Violence of the Accident, thruſt out of its Socket,

and then a Horſe is ſaid to be *Hipſhot*; but if it is not reduc'd immediately, he will be irrecoverably lame. The Cure conſiſts in the ſame Applications that are proper for a Shoulder-ſplait.

CHAP LXIX.

Of Bones broken and out of Joint.

THE replacing of Bones that are disjointed, is a very unſucceſsful Operation, inſomuch that we have few or no Inſtances of Horſes ever becoming ſerviceable after their Bones have been diſplac'd; but broken Bones have often been recovered; and *Solleyſell* gives an Inſtance of a Horſe that had a Fracture of the Bone, with a large Wound in the Fleſh; and of a Mule that had a Fracture in the Leg; both which were cur'd by one who was neither Surgeon nor Farrier; and *Ruini*, and other *Italian* Authors, have laid down a Method of Cure for all ſuch Accidents, tho' the Succeſs muſt be very much owing to the Goodneſs of a Horſe's Conſtitution and Sagacity, there being ſome who will favour any Infirmities or Lameneſs more than others.

When the Bone is fractur'd, the Horſe ought to be rais'd in a Sling: and while one holds the Member with both Hands three or four Inches above the fractur'd Part, another muſt extend it, and draw it quite ſtreight; after which it is to be bath'd with Vinegar and Bole, and a thick flaxen Cloth dipt in the ſaid Liquor, and laid ſmooth round it; then with a Roller about two Inches broad, make ſeveral Rounds upon the fractur'd Part, aſcending alſo above and below it, making your Turnings even, that the Splints may lie on cloſe; after which, apply two or three thin Splints of Wood, wrapt up in Linnen Cloth or Hurds, always taking care not to let any of their Ends preſs upon the Sinews; and above them make ſeveral Turns with a long Roller upwards and downwards, until the Splints are firm and immoveable.

The Leg muſt be often bath'd above and below the Dreſſing with Vinegar, or warm Lees of Wine, eſpecially for the firſt Fortnight, and the Horſe kept to a laxative Diet; and the Dreſſing kept on for the ſpace of forty Days, making it tight as often as it begins to turn ſlack. If the Horſe is inclinable to favour his Infirmity, he will recover without much Trouble; but if it be otherwiſe, it will be proper to keep him conſtantly in a Sling, ſuffering the fractur'd Member juſt to touch the Ground.

This

This is the propereſt Method for all Fractures in the Legs and Paſterns; but in Caſes where other Bones are broke, the greateſt Part muſt be left to Nature, who will make a Re-union in her own Way, tho' it may not be without ſome Deformity; but we can expect no great Aſſiſtance either from Art or Nature, when a Fracture happens on any large Joint, or very near it; or when a Bone is much ſhiver'd and ſplinter'd.

The Method of reducing Bones out of Joint.

The uſual Method to reduce Bones that are diſplac'd, is by caſting the Horſe on a ſoft Place, and putting four ſtrong Paſterns on his Feet, drawing him from the Ground, ſo as his whole Weight may, in a great Meaſure, reſt upon the disjointed Member. I have ſeen two Horſes ſerv'd in this Manner for a Diſlocation in the Shoulder, but neither of them ſucceeded. Some uſe a Method that is much more cruel; they tie one End of a leathern Thong about the Horſe's Paſtern, and the other to a yielding Shrub; and then by whipping him, make him ſtrain with all his Force, till the Bone returns to its proper Place; but this Method is not only dangerous, but ſeldom ſucceſsful.

CHAP. LXX.

Of Hurts in the Stifle.

THESE, as moſt other Accidents of this Kind, come by a Strain or Blow on the Stifle-bone, which is the Knee-pan of a Horſe; ſometimes the Ligaments which cover that Bone are ſo much relaxed, that it becomes looſe, moving upwards, and downwards, and Sideways, by the Touch of your Hand; and the Horſe going downright lame, is ſaid to be *ſtifled*; but it is a general Miſtake in Authors, to fancy the Bone is miſplaced, that being merely impoſſible, unleſs the broad Ligaments were cut, and then, indeed, it might burſt out of its Place.

The Cure.

The Cure conſiſts in the Application of thoſe things that are proper to ſtrengthen the relaxed Ligaments. If the Strain be new, Vinegar and Bole, *&c.* ought to be made uſe of; and after that a Plaiſter made of Pitch, Myrrh, Olibanum, Dragon's Blood, *&c.* The Pitch muſt be melted with a little Oil, or Hogs-lard, and the other Ingredients made into Powder, and ſtirred into it while it is warm; after which it may be poured upon the ſtifling Place, covering it with Flokes, or the Stuffings of an old Saddle. The Horſe ought not to be put

to any hard Exercise, but may go to Grass, or be led Abroad for the space of an Hour every Day, until he is able to bear greater Fatigue.

CHAP. LXXI.

Of the Bone-spavin.

THIS is a hard bony Excrescence growing on the Inside of the Hough, not far from the Elbow, and is generated of the Matter which nourishes the Bones and Ligaments. Some Horses are foal'd with this Imperfection; but it proceeds for the most part, from straining, while a Horse is too young to bear violent Fatigue, which, in Process of Time, causes Lameness.

The Cure. The main Intention in the Cure, is to remove the Excrescence, but this is hardly practicable when it adheres to the Bone as a Part of its Substance, but only when it lies as an Appendage, in which Case it may be removed by a dexterous Application of the Fire, or by the Use of caustick Ointments; for these, by bringing a Flux of Matter, and a constant Moisture into the Part, will, by Degrees, loosen that hard Substance from its Adhesion, so that it may be easily taken off; and for this Purpose we recommend the following.

" Take Quicksilver and Brimstone, of each two Ounces; rub them in a Mortar until they turn to a black Powder; then take *Spanish* Flies and Euphorbium in Powder, of each six Drams, Corrosive Sublimate two Drams, the Apostles Ointment four Ounces. Mix them cold in a Mortar, or on a Marble.

The Method of applying this Ointment, is first to rubb the Part with a piece of any round smooth Stick, and then lay over a sticking Plaister to guard the rest of the Hough; this must be made of Rosin, common Pitch, or *Burgundy* Pitch, spread on a thick Piece of Leather, having a Hole cut in the Middle, that the Tumor may come thro' it, upon which the Ointment is to be apply'd, the Hair being also shav'd away, over which must be laid a Pledgit of clean Hurds, fastened with an easy Bandage round the Hough, or another sticking Plaister over all. This Ointment will at first draw out a thin Water; but after two or three Days Application, it will form an Escar, which may be scarrify'd with a Fleam or Lancet, continuing the Application every other Day until the Bone becomes loose, or its Substance dissolves; and after it is removed, the Ulcer

must

muſt be dreſs'd with Honey of Roſes, and Tincture of Myrrh warm, and then healed with Baſilicon mix'd with Turpentine, &c.

An Obſervation concerning the taking up a Vein.

In giving the Fire, *Solleyſell* adviſes to ſear the large Vein above and below the Thigh, from an Opinion that the Tumour is fed by it; but it is plainly otherwiſe, the Office of that Vein being only to take up and carry back that Portion of the Blood which is more than neceſſary for the Nouriſhment of thoſe Parts through which it paſſes; and when that Conduit is once ſtopt, there muſt be a greater quantity of Blood and Nouriſhment retain'd in thoſe Parts, at leaſt for ſome time, than before; wherefore ſuch an Effect muſt be owing, not to an Abatement of Humours, but to a greater quantity of Moiſture derived from a greater quantity of Blood, whereby the Bone may be more eaſily ſeparated, as we have already obſerv'd; but if it chance to have this good Effect in removing a Bone-ſpavin, the Loſs of ſo large a Veſſel may eaſily be of worſe Conſequence in other Reſpects, as ſhall be ſhewn hereafter.

CHAP. LXXII.

Of the String-halt.

THE String-halt is an involuntary and convulſive Motion of the Muſcles, which extend or bend the Hough; when it ſeizes the outſide Muſcles, the Horſe ſtraddles and throws his Legs outwards, but when the Inſide Muſcles are affected, his Legs are twitched up to his Belly; ſometimes it is only in one Leg, ſometimes in both; but theſe things are ſo well known, that we need not inſiſt on them. It generally proceeds from ſome Strain or Blow; for whatever creates a more than ordinary Pain in any particular Muſcle belonging to the Hough, may cauſe a too great Derivation of Blood and Spirits, whereby ſuch an habitual Contraction may be produc'd.

The Cure is difficult, and rarely attended with Succeſs; though, in the Beginning, a String-halt may be removed with good Rubbing, and the Uſe of Fomentations, with daily but moderate Exerciſe; for by this Means the Blood and Spirits may be equally derived into the diſeaſed Muſcle and its Antagoniſt. The laſt Refuge is uſually the Fire, which has been known to anſwer, at leaſt ſo far as to prevent abſolute Lameneſs.

CHAP. LXXIII

Of the Blood-ſpavin.

The Blood-ſpavin compar'd to a Varix *in Men.*

THIS Diſtemper is a Dilatation and Swelling of the Maſter-vein, on the Inſide of the Hough, and is juſtly compar'd by *Solleyſell* to a *Varix* in Men. Its Cure is perform'd by taking up that Part of the Vein which forms the Tumor, and healing the Wound with proper Digeſtives and good Bandage; ſome think it ſufficient to tie a Ligature above the Swelling, and then make an Aperture in the Vein, letting it Blood until the Swelling falls; after which they unbind the Ligature, apply a reſtringent Charge of the Whites of Eggs, Bole, and Vinegar, with a firm Bandage: But this is not ſo certain, eſpecially when the Spavin is form'd under the great Joint of the Hough, and where the Vein takes a winding turn round it, in which Caſe it will be apt to grow again as ſoon as the Bandage is removed. But a cold Charge is very neceſſary all round the Joint, when the Vein is taken up, to prevent the Swelling that muſt follow upon the Operation.

CHAP. LXXIV.

Of Malenders and Selenders.

THE *Malenders* are Chops or Chinks on the Bending of the Knee, which diſcharge a ſharp indigeſted Matter, cauſing Pain, and making the Horſe go lame before, as the *Selenders*, which appear on the Bending of the Hough, make him go lame behind. They both proceed from the ſame Cauſe, and are ſometimes accompanied with a Scab, and with a conſtant ſtaring and briſtling of the Hairs.

The Cure. The propereſt Method for the Cure of thoſe Infirmities, is, in the firſt place, to waſh them with a Lather of black Soap warm, or with old Chamber-lye; after which apply a Poultice of the Roots of Marſh-mallows and Linſeed, ſoften'd with Linſeed Oil; and as often as it is apply'd, you may mix half an Ounce of Camphire in Powder, tying it on with a Roller; this may be continued till the Scabs fall off, and the Sores grow clean. Then take Turpentine and Quickſilver equal Parts, ſtirring them in a Mortar till they be well incorporated; ſpread a Pledgit with this Ointment, and apply it to the Sore, tying

it

it on as above directed, and renew the Dreſſing every Day until the Cure is perform'd, obſerving alſo conſtantly to waſh all the Chinks with Brandy or Spirit of Wine.

CHAP. LXXV.

Of the Hough-bony.

THIS is a hard Tumor that grows on the Elbow of the Hough, and is ſinewy, like the Matter which covers that Bone. It proceeds from a Strain or Blow, and when it happens to be of long Continuance, it becomes difficult and hard to be cur'd, the Subſtance of the Swelling being like harden'd Glue.

In the Beginning take the Soldiers Ointment, Ointment of Marſh-mallows, and Oil of Amber, as directed in a preceeding Chapter againſt Strains in the Shoulder, and rub it into the Part with a hot Bar of Iron, holding it very cloſe, and taking care to fetter the Horſe ſo as he may not ſtrike; if it does not yield to this Remedy, take a ſufficient Quantity of the Diachylon with the Gums, which may be had at any Apothecary's; melt it in a Pipkin, and pour it warm upon the Top of the Hough, renewing it as often as it begins to waſte. If the Swelling increaſe, and turn to an Impoſthume, it may be ripen'd with Cataplaſms, and opened with a hot Iron, piercing from below upwards, and dreſſed with the common Digeſtive of Turpentine and Honey, or the Yolks of Eggs, with a Mixture of Spirit of Wine, making a firm Bandage over the Part; and by theſe Means it will be cur'd. But in Caſe of a continued and obſtinate Hardneſs, you muſt proceed to the Fire, firſt penetrating a little Way into the Body of the Tumor with a round Iron, and drawing from thence ſeveral ſuperficial Lines, which may be dreſs'd according to the Method already laid down for performing that Operation.

CHAP. LXXVI.

Of the Curb.

THE Curb is a Swelling on the ſinewy Parts of the Leg, a little below the Elbow of the Hough, but ſomewhat higher than the Spavin, on the Inſide, and is generated of the ſame Matter that nouriſhes the Tendons and Ligaments: It is broader and higher at its upper Part than below, and ſometimes cauſes the Horſe to halt, by hindering the Action

of the Joint. It happens chiefly to draught Horſes, and is hardly curable by any other Means than Fire; however, the Medicines directed in the preceeding Chapters may firſt be comply'd with, or the Plaiſter of Frogs, with four times the uſual quantity of Quickſilver, may be laid to the Curb, firſt ſhaving away the Hair, and renewing it once a Fortnight. This Plaiſter is ſomewhat troubleſome to make, but it may be had of any Apothecary when beſpoke; and I dare anſwer it will be of greateſt Service to remove all hard Swellings on the Bones or Sinews, by diſcuſſing them; ſometimes it has the Effect of a ſuppurative Plaiſter, and will cauſe an Impoſthumation, which equally anſwers the End, as theſe ſort of Tumors often terminate that Way with good Succeſs. But they who will give themſelves the Trouble to make it, may obſerve the following Method, which I have borrowed from one of the beſt Judges in Pharmacy.

The Mercurial Plaiſter.

" Take Frogs N° 3. Earth-worms four " Ounces, Hogs-lard one Pound, White- " wine one Pint: Boil till the watry Parts " are evaporated; ſtrain the Lard, and put to it half a " Pound of Litharge, boiling it again with freſh Wine till " the whole be incorporated. Then put in Wax and Oil " of Bays, of each two Ounces, Adders Fat an Ounce and " a half, Frankincenſe one Ounce, Euphorbium in fine " Powder half an Ounce, with Quickſilver half a Pound, " firſt incorporated in a Mortar with two Ounces of Tur- " pentine, two Ounces of Oil of Spike, and half an Ounce " of liquid Storax: Make it into a Plaiſter, and keep it for " Uſe.

CHAP. LXXVII.

Of a Jardon.

THIS is a hard callous Tumor a little below the Bending of the Ham on the Outſide; it is at firſt ſcarcely diſcernable, but in Time cauſes the Horſe to halt, and grows ſo painful as to make him pine away, and become light belly'd; but it happens moſt frequently to manag'd Horſes, eſpecially thoſe who have been kept too much on their Haunches. The Cure may be firſt attempted by applying the Mercurial Plaiſter, as above directed; but if it proves obſtinate, it muſt be treated as a Bone-ſpavin, *&c.*

CHAP.

CHAP. LXXVIII.

Of Splents and Oſſets, &c.

A *Splent* is a callous hard Subſtance which adheres to the Inſide of the Shank-bone; when there is but one, it is called a ſingle Splent; but when there is another oppoſite to it, on the Outſide of the Shank-bone, it is then called a peg'd or pinn'd Splent.

The Matter and Formation of Splents.

The Reaſon of all ſuch Excreſcences may be eaſily enough apprehended by thoſe who will take the Pains to examine the Shank-bone of any Horſe after the Fleſh is ſcraped off, where they may obſerve two Appendages growing to the Shank-bone, which are to be met with in all Horſes that are young, tho' the Seam by which theſe Bones are joined to the Shank, is, in ſome old Horſes, quite obliterate and worn out, except in the Middle. Each of theſe Appendages reſemble a Bodkin, being broad at Top, and narrow at Bottom, and are joined to the Shank by Appoſition, and faſtened by a gummy Matter not unlike Glue.

Now if a young Horſe be preſs'd with any extraordinary Weight towards his Shoulders, before thoſe Bones are firmly cemented and put together, but eſpecially when he goes down Hill with a Burden or a heavy Man upon his Back, it bears ſo hard upon his Fore-legs, that it cauſes theſe bony Appendages to give Way, and ſuffer a Diſtortion; and altho' the Horſe does not always grow lame upon it immediately, yet it brings a Redundancy of this glutinous Matter, which ouzes from between the Bones on the Inſide of the Shank, where there is a little Hollowneſs and Hardneſs under the *Perioſteum*, like the Gum which iſſues from a wounded Tree, and is thus form'd into a Splent. But when the Diſtortion is violent, or if the Horſe be of a tender, delicate Make, the Afflux of Matter will be the greater, ſo that it ouzes through the oppoſite Side alſo, and forms a pegg'd or thorough Splent, which looks as if a Wedge was ſtruck quite thro' the Bone; ſometimes a double Splent is form'd, which is call'd by the *French* a *Fuzee*; and this happens when there is a freſh Afflux of Matter upon a Splent that is already begun, like the Lays upon an Iſicle, by the running down of freſh Water upon it. This laſt ſort cauſes a very great Deformity, and is therefore eaſily perceivable.

Moſt of theſe Swellings make their firſt Appearance a pretty Way below the Knee, where the Cleft between the Bones

Bones is the wideſt, which is very natural; and in ſome Caſes, but eſpecially when they are of long Continuance, they not only aſcend to the Knee, but go a good Way down the Shank, and ſometimes backwards towards the Maſter-ſinew.

Oſſets. *Oſſets* are little hard Subſtances that ariſe among the ſmall Bones of the Knee, on the Inſide; they grow out of the gummy Subſtance which faſtens thoſe Bones together, and derive their Origin from a Matter like that which produces Splents, and like them proceed from the ſame Cauſe, *viz.* the ſtraining of a Horſe while he is young, and before his Joints be well knit; and from hence alſo we may underſtand the Nature of all thoſe hard Tumors already treated of, which grow near the Joints, whether they be *Spavins*, *Jardons*, *Curbs*, or of any other kind, their chief Difference conſiſting in their Situation, being all of them form'd of a Matter, which, in time, grows hard, yea, even as the Bone itſelf; and this is the Reaſon why they cannot be mov'd, but by things that are of the greateſt Efficacy. Notwithſtanding, if they be diſcover'd before they acquire ſuch a Degree of Hardneſs, they may be made to yield to leſs powerful Remedies than what we are ſometimes conſtrain'd to make uſe of.

The Cure of Splents, &c. But as to *Splents*, which are our preſent Buſineſs, it is very plain from what has been ſaid concerning their Origin and Growth, if the Infirmity could be diſcover'd at firſt, they might be kept down, and wholly prevented by the Application of firm Bandage upon the Shank; for by it not only the Bones would be conſtantly kept cloſe togther, but the *Perioſteum* and Fleſh united to the Bones, ſo that there would be no Room for any vagrant Matter to lodge between them; but ſince it is otherwiſe, that theſe are ſeldom taken Notice of until they bring a Deformity along with them, or a Halting, they muſt therefore be treated as other hard Subſtances of the like Nature.

And *Firſt*, If the Horſe be young, and the Splent not of a very old ſtanding, an Attempt is to be made to diſſolve it; and for that Purpoſe nothing is preferable to the Mercurial Plaiſter, inſerted in the 75th Chapter, which muſt be apply'd ſpread on Leather, and continued a conſiderable Time, ſhaving away the Hair as often as it is renew'd; but if it is not to be removed without Suppuration, then rub it ſoundly with the Handle of a Hammer; and after its Subſtance has been thus bruiſed, it may be brought to an Impoſthume, by applying a Mucilage Plaiſter, or ſome

good

good Poultice made of the Roots of Marſh-mallows, Bean-flour, Fenugreek and Linſeed Powder, and ſuch-like, with a ſufficient Quantity of Ointment of Marſh-mallows; and then the Matter may be diſcharged as from a common Bile or Impoſthume, by making a ſtreight Inciſion upon it from below upward. But if a more expeditious Method be requir'd, the Cauſtick Ointment, inſerted in the 71ſt Chapter, may be apply'd, with the neceſſary Precautions, obſerving further, not to continue it longer than an Eſcar is formed by it; or the following Method out of *Solleyſell* may be comply'd with, which is very eaſy.

" Shave the Hair, knock, rub, and ſoften the Splent; " then take a Piece of the Rind of Bacon, not very fat, " and lay it on the Part with the fat Side outwards; afterwards apply a flat Cautery, or red-hot Iron, of the " Bigneſs of a Shilling, holding it upon the Skin; and in " the mean time order another Iron to be heated, which " muſt be apply'd on another Part of the Skin, but ſtill " over the Splent, continue after the ſame Manner till the " Swelling be diſſolved; then lay a Plaiſter over it, and " Shavings of Cloth over that, taking Care that the Horſe " do not bite it off.

But one thing is very material after the Removal of a Splent, and that is, to keep a firm Bandage over the Part for ſome time, to prevent its Return; for unleſs the Parts be kept very cloſe, the ſame Matter which breeds it at firſt, will be apt to ingender it again. When the Bone happens to be laid bare, it muſt be treated according to the Method laid down in the Cure of Wounds.

The Cure of a Splent is hardly to be attempted, if the Horſe be grown old, for the Matter becomes then ſo hard, that there is no Way to make it yield, without running a very great Hazard; neither is it curable when the Diſeaſe is in the Bone; for albeit this is ſometimes miſtaken for a Splent, yet it is, for the moſt part, no other than what proceeds from a *Caries* or an Ulcer in the Bone, which, in time, has been heal'd, and grows into a flinty hard Subſtance: This may be known by its bunching out and Unevenneſs, and by its Hardneſs.

The *Oſlets* are more difficult and hard to be cur'd than Splents, becauſe of their Situation among the ſmall Bones which are in the Joint, and are therefore only to be attempted by giving the Fire, though even that is not always attended with Succeſs. But theſe are rarely to be met with.

CHAP.

CHAP. LXXIX.

Of a Ring-bone

THIS is a hard callous Subſtance, which grows in the hollow Circle of the little Paſtern, immediately above the *Cronet*; it is ſometimes hereditary, but more frequently occaſioned by a Strain, and is bred of the like Matter with the other hard Subſtances we have treated of in the preceeding Chapters; ſometimes it goes quite round like a Ring, from whence it has obtained the Name of *Ring-bone.*

The Cure. The uſual Method of taking it off, is by the Application of ſtrong cauſtick Medicines, ſuch as Quick-lime, Arſenick, Realgar, and the like, the Hair being firſt ſhav'd, and the hard Subſtance ſcarrify'd. Some uſe unſlack'd Lime in Powder, and apply it pretty thick over the Part, faſtening it with a Cloth, and then ride the Horſe into Water, letting him ſtand ſome time in it; by which Means the Subſtance of the Ring-bone, is deſtroy'd, and there is nothing further neceſſary than to heal up the Ulcer. This is a very expeditious way, but whoever tries it had need be careful to guard the *Cronet*, or elſe it will be apt to cauſe a gathering of Matter under the Hoof, which would readily corrode the Coffin-bone. There are others who cut the Ring-bone ſtreight downwards to the *Cronet*, in ſeveral Places, and put in Rowels; which, by forming Ulcers, and bringing a Rottenneſs and Corruption all about the Part, cauſe the Excreſcences to looſen or melt away.

Solleyſell obſerves, that ſome Ring-bones cannot be removed without giving the Fire, nor does that always ſucceed, but when the Soal is alſo taken out, and the Fruſh laid open; for by this there is a very great Moiſture deriv'd into the Part, and at the ſame Time Room is given for the Matter to diſcharge itſelf, which might otherwiſe looſen the *Cronet*, by being detain'd in the hollow Circle of the Paſtern. The Method is this: "Take out the Soal, and after the "ſecond Dreſſing, cut the Skin in ſeveral Places above the "*Cronet*, ſo as to lay the Ring-bone bare; then with a "hot Knife cut the Ring-bone through the Inciſions till you "reach to the Bottom, not all at once, but repeating the "Strokes gently; in the mean time make a Cleft into the "Fruſh, and keep it open by applying into it Pledgits "dipt in a Mixture of Tar, Honey, and Turpentine; "laying the ſame Dreſſing to all the ſear'd Parts, until "the Eſcars fall off.

Now

Now it is very plain, a Ring-bone may be removed by any of the preceeding Methods, when rightly manag'd, and the only thing that makes them unſucceſsful, is, when a Horſe happens to be old or diſeaſed, or when it chances to be a natural Imperfection; but the moſt common Impediment is the Want of Skill to heal up the Ulcers, and to prevent the Matter getting under the Hough, and likewiſe to keep down the Growth of new Excreſcences, which are ever apt to ariſe on thoſe Parts; and therefore, as ſoon as the Pain and Anguiſh is over, the Sores ſhould be dreſs'd with *Ægyptiacum*, or ſome other cleanſing Ointment, and all the hollow Parts round the Paſtern fill'd with Flax dipt in Vitriol-water, or rather Spirit of Wine, and over all a Bandage as firm as the Horſe can bear, reaching from beneath the *Cronet* almoſt to the Knee; this being the true Method to prevent the ill Conſequences that may ariſe in the Cure, *&c.*

CHAP. LXXX.

Of Wind-galls.

WInd-galls are ſoft, yielding, flatulent Tumors, ſeated on either Side of the Foot-lock Joint, *&c.* they are cauſed by violent ſtraining, or by a Horſe's ſtanding on a ſloping Floor, and by ſeveral other Accidents, as Blows, Strokes from another Horſe, *&c.*

The Cure.

The uſual Method of cure is by opening them with a Fleam, to let out the gummy Matter, and applying to the Orifice a little Plaiſter of Roſin, Pitch, Maſtich, Oil of Bays, with the White of an Egg; and there are ſome who mix with Plaiſters of this kind, Verdegreaſe and Turpentine, which is not amiſs; but the Ointment made of equal Parts of Turpentine and Quickſilver will anſwer the End much better, eſpecially if with it be mixed a ſmall Quantity of Verdegreaſe, and the White of an Egg, to make it ſtick faſt to the Part. The hollow Spaces on each Side of the Sinew ought to be fill'd with Hurds moiſtened in warm Spirit of Wine, and good Bandage apply'd over all the Fetlock, to prevent their growing again.

But to Wind-galls that are large, emollient and ſoftening Medicines are to be made uſe of, as Poultices made of Mallows, Marſh-mallows, *&c.* or the Mucilage Plaiſter, or Diachylon with the Gums, ſpread thick upon Leather: Or the following Charge may be apply'd:

" Take

" Take two Ounces of Galbanum pounded, boil it gent-
" ly in a Pint of Vinegar over hot Embers, with half a
" Pound of common Turpentine; and after half an Hour's
" Boiling, take it off the Fire, and add to it Maſtich,
" Myrh, Dragons-blood, and Bole, of each three Ounces;
" mix, and make a Charge, which muſt be apply'd hot.

If Recourſe muſt be had to cauſtick Medicines, an Ointment may be made with Quickſilver and Turpentine, of each an Ounce, Euphorbium and *Spaniſh* Flies in Powder, of each one Dram; this may be apply'd to the Wind-gall, taking care to guard the great Sinew and the neighbouring Parts, as directed in a preceeding Chapter. The Horſe muſt always be ty'd up, to hinder him from biting it off. But if this cauſe too great an Inflammation, as may happen to ſome delicate Horſes, the Ointment may be made weaker, by mixing a greater Quantity of Turpentine with it.

CHAP. LXXXI.

Of a Sinew-ſprain, &c.

WHEN the Maſter-ſinew above the Hough, or that above the Footlock, or any of the other Sinews or Ligaments in thoſe Parts are ſtrained or relaxed, they cauſe intolerable Pain and Lameneſs; and when violent, will ſometimes bring on a Fever, and endanger a Mortification, unleſs there be extraordinary Care taken, and timely Applications made. Therefore, as ſoon as you obſerve your Horſe ſtrain'd in any of thoſe Parts, which, if it be in the Sinew, may be known by its being unbent and relaxed, and by the Swelling and Inflammation, you muſt apply a cold Charge, ſuch as has been directed for Strains in the Shoulder, *&c.* and after that, a Plaiſter to ſtrengthen the Part. But if it be ſo violent as to create ſome untowardly Symptoms, making the Horſe ſick, and forſake his Food, you muſt, in that Caſe, take a plentiful deal of Blood from the Neck, and bathe all his Leg two or three Times a Day, with woollen Cloths wrung out of a hot Fomentation, made of Mint, Rue, Penny-royal, Marjoram, Baum, Roſemary, Wormwood, Lavender, and ſuch like Things; for theſe ſtrengthen and comfort the nervous Parts; after which you may uſe Spirit of Wine camphorated, keeping it alſo cover'd with a Cloth dipt in the ſame, and faſten'd with an eaſy Bandage. Inwardly may be us'd all ſuch things as are proper to promote Sweat, and eaſe Pain; and as ſoon as the Anguiſh is over, it will be proper to apply a good ſtrengthening

Charge,

Charge, or Plaiſter of Pitch, Diachylon, Dragons-blood, and Bole, &c. as has been directed in a preceeding Chapter.

Sometimes the Strains in the Sinews of the Legs and Paſterns, are occaſion'd by an *Attaint* or *Over-reach* ; we need not therefore beſtow any other Place in treating of ſuch Accidents, but only take Notice, that when they are accompanied with a Wound, they ought to be dreſs'd according to the Directions we have already laid down for the Cure of Wounds, avoiding, as much as poſſible, all oily and cauſtick Medicines, excepting when ſome preternatural Excreſcences require the Uſe of the latter. *Attaint or Over-reach.*

The ſame Manner of Treatment is alſo requiſite to a Horſe that is gall'd or wounded by being *caſt in his Halter*, applying nothing but good clean Digeſtives of Tar, Turpentine, and Honey ; and making uſe of ſpirituous Fomentations, with a good Quantity of Aſhes boil'd in them, together with Bandage as ſoon as the Part is able to bear it ; and by theſe the Horſe will be eaſily cur'd, if he be otherwiſe in good Caſe, without the Pain of corroſive Applications, which only become neceſſary after the Sinews have been relaxed and rotted with greaſy Ointments. *Halter-caſt.*

CHAP. LXXXII.

Of the Greaſe falling into the Legs.

THE Diſtemper that goes under this Denomination, is a Swelling and Gourdineſs of the Legs, which frequently happening to Horſes after a Journey, moſt People have therefore believ'd their Greaſe to be melted by hard Riding, and fallen into their Legs ; and that which may have probably given Encouragement to this Opinion, is the Colour of the Matter iſſuing from the Chinks and Sores in thoſe Parts when they come to break, ſomewhat reſembling Greaſe ; as the Subſtance of the Legs is nervous and ſinewy, whereby the Matter which comes from thence is different from what is diſcharg'd from the muſcular and fleſhy Parts, where the Redneſs and Texture of the Blood gives it a different Colour and Conſiſtency.

It would be very little to our Purpoſe to beſtow any time in confuting this ill-grounded Opinion, ſince the contrary muſt be manifeſt to thoſe who have the leaſt Inſight into the Oeconomy and Structure of a Horſe ; we ſhall therefore proceed to acquaint the Reader, that the Greaſe has,

in

in common with all other Swellings, either a Viſcidity and Thickneſs of the Juices, or a Relaxation of the Veſſels in which theſe Juices flow, or both.

But if we examine more particularly into the Matter, we ſhall find, that beſides theſe, there are other Circumſtances which conduce very much to the Swelling, and that is, the Situation and Make of the Legs. As to their Make, we have already obſerv'd, that they are very much compos'd of Nerves and Sinews, whoſe Veſſels are ſo ſmall, and laid ſo cloſe together, that the Fluids contain'd in them may very eaſily become obſtructed; and by their Situation, they are the moſt dependent Members of the whole Body; whereby, according to the Doctrine of Circulation, all the Juices that are to be returned in the Maſs of Blood muſt aſcend upwards in the Veins, which, in thoſe Parts, have little or nothing to help their Progreſs but the Vibrations and Shakings of the Arteries, together with the muſcular Motion. Whereas on the other Hand, the arterial Fluid is conſtantly forwarded into the Limbs, not only by its Deſcent, but by its continual Expulſion from the Heart; and therefore, when once the Blood is vitiated, and the Veſſels in the Limbs relaxed and weakened, a Swelling muſt of Conſequence be expected, becauſe a greater Quantity of Fluid is carried downward by the Arteries, than in that Caſe can be returned by the Veins.

And this is agreeable to all the common Accidents and Cauſes that uſually bring on the Diſtemper, as Wounds, Bruiſes, hard and immoderate Riding, coming off a Journey, or from Graſs, to ſtand in a Stable, full Feeding without due Exerciſe, Colds, and Surfeits, Debility and Weakneſs; and in fine, whatever may any wiſe relax and weaken the Tone of the Fibres; and if we examine into theſe more particularly, we ſhall find, that according to the foregoing Theory, all of them may very naturally bring on the Greaſe.

For, in the *firſt* Place, albeit a Wound or Bruiſe, or other outward Accident in the dependent Parts, is ſeldom attended with any uncommon Symptoms, if the Horſe be otherwiſe ſound, and that due Care is taken in the Beginning; yet, if a Horſe in theſe Circumſtances be neglected, or his Blood be vitiated, it will be apt to bring a Swelling into the Legs, as all Pain is a Stimulus which draws a more than ordinary Flux of Humours to the Part affected; and if the Hurt be near any Joint, *&c.* it cauſes ſuch a Stiffneſs and aching, that the Horſe becomes exceeding lame,

and

and unable to lie down; ſo that by continual ſtanding the Legs become ſwell'd and gourded.

Secondly, By immoderate hard Riding the Sinews and Ligaments are actuated and ſtretch'd, which is ſuddenly followed with Stiffneſs and Pain in the Joints, whereby, as in the preceeding Caſe, a Flux of Humours is drawn down upon the Legs.

Thirdly, When Horſes are come off a Journey, or from Graſs, to ſtand in a Stable, their Legs are apt to turn gourdy and ſwell'd; the firſt of theſe Caſes differs not from the preceeding in what relates to the Pain and Stiffneſs in the Limbs; but it has alſo, in common with the latter, the abrupt breaking off a Habit from the Exerciſe to Reſt and full Feeding; for while a Horſe is upon his Journey, or at his Liberty in the Fields, he is every Day more or leſs in Motion, whereby the Blood is kept in conſtant Agitation; but when he comes to ſtand ſtill in the Stable, a Check is put to the Motion of the Blood in the ſmall Veſſels of the Limbs, while, by an habitual Aptitude, it ſtill continues to be equally detach'd into all Parts by the larger Arteries, which may eaſily bring on the Greaſe, even while there is yet no manifeſt Diſorder in the Blood itſelf. But in the Caſe of Horſes newly taken up from Graſs, there is beſides this, oftentimes a Default in the Blood, eſpecially when they are ſuffer'd to run abroad till late in the Year; for then the Graſs loſes its Strength, and begets Crudities, which render the Blood and other Juices viſcid and thick; and when a Horſe is taken off his Exerciſe, and brought to more generous Feeding, a *Plethora* or Fulneſs will ſoon happen, whereby it will be the more apt to ſtagnate in the Limbs, and cauſe ſuch Heat and Itching, as muſt be ſoon follow'd with a Gourdineſs and Swelling. The ſame Effect is alſo produc'd by Colds, Surfeits, and ſometimes by pampering and full Feeding alone, without the Concurrence of other Circumſtances.

And *Laſtly*, When a Horſe has been brought low by Sickneſs or repeated Evacuations, or by any other Cauſe, there follows an univerſal Relaxation of Body; ſo that the Blood and other Juices become languid, and are apt to ſtagnate in thoſe Parts that are the moſt dependent and remote from the Heart; not only as the Veſſels themſelves are relaxed, and loſe their Spring, but alſo from the Heavineſs and Inactivity of the Spirits, whereby they become unable to give their Aſſiſtance in its Return; and thus the Greaſe is oftentimes complicated with ſome other Diſtemper.

The Cure. From what has been ſaid, it will be eaſy for any one to underſtand the Nature of the Greaſe, and the Manner of its Production; we ſhall therefore proceed to the Cure, wherein the firſt thing to be regarded, is the State and Condition of the Horſe; for if the Greaſe be an Attendant on ſome other Sickneſs, the Cure will be ſo much the more difficult; and it will be in vain to expect a Recovery until the Diſeaſe is removed, which has been the Origin and Cauſe of it; and therefore, if the Horſe be hectick, or has got the Yellows, or Farcin, *&c.* the Methods laid down for the Cure of thoſe Diſtempers muſt be follow'd, at the ſame time proper Applications are made outwardly: But if it be produced of the common and ordinary Accidents, and that the Horſe is not otherwiſe diſeaſed, a Method peculiar to that Diſtemper only is to be obſerv'd.

And in this Caſe, if the Horſe has been pamper'd and well fed, the Cure ought to be begun by Blooding and Purging, to leſſen the Redundancy of Humours; neither ſhould theſe be too often repeated; but what is wanting that Way, had much better be effectuated by a more ſpare Diet, with daily Exerciſe. For in all the Circumſtances of the Greaſe there is a Tenderneſs and Delicacy, either originally, or brought on by Habit or ill Uſage, which is alſo manifeſt from hence, that young Horſes are moſt ſubject to the Greaſe, as their Bodies are looſe, ſoft, and flexible, and their Juices naturally viſcid and glutinous, which is neceſſary to the Accretion and Growth of all young Animals. Wherefore, when Evacuations are either too large, or often repeated, inſtead of being ſerviceable, they often become hurtful, and render the Diſtemper more obſtinate, by adding to that Weakneſs and Relaxation of Body which is natural to greas'd Horſes.

After moderate Evacuations, a Rowel may be made on the Inſide of the Thigh, or on the Belly, which may be continued for a Month, or longer, if there be Occaſion, and in the mean time, the *Cinnabar* or *Antimonial Balls*, &c. ought to be conſtantly given, in the Manner we have already laid down for the Cure of the Farcin; and while theſe things are complied with internally, the Legs ſhould be frequently rubb'd (but not with ſuch hard Inſtruments as ſome People make uſe of, a good Whiſp of Hay and a Bruſh being ſufficient for that Purpoſe.) Baths and Fomentations, ſuch as may draw off the Humours by Tranſpiration, or render them fit to return back again with the common Current, are alſo to be made uſe of; and for this Purpoſe we recommend the following.

" Take

" Take of common Wormwood eight handfuls, St. " *John's* Wort, Centaury, Cammomile, or the Flowers " thereof, of each four handfuls, Elder-flowers two hand- " fuls, Bay-berries half a Pound. Boil them in two Gal- " lons of Water till one third is conſumed, and make a " Fomentation.

The Horſe's Legs are to be bathed three or four times a Day with Woollen Cloths wrung out of the Liquor, and apply'd as hot as he can bear them, adding always a third Part of Spirit of Wine or Brandy; and if they be pretty much inflam'd, as happens ſometimes when the Sinews are affected, a good Quantity of the Aſhes of green Twigs of Vines, Walnut-tree, or Oak, may be boil'd in the Decoction, adding more Water. A good Bath or Fomentation may be alſo made, by boiling theſe Aſhes alone, or the Aſhes of any other green Wood in Water, when the other Ingredients are not eaſy to be had. The Lees of Wine, with a Mixture of black Soap, are alſo very proper to be apply'd warm, as alſo Cow's-dung boil'd in Vinegar. The following Cataplaſm may likewiſe be made uſe of with good Succeſs.

" Take of Honey one Pound, Turpentine ſix Ounces, in- " corporate them with a Spoon; then take Fenugreek and " Linſeed-meal, of each four Ounces, Bay-berries and Ju- " niper-berries dry'd and made into Powder, of each two " Ounces: Boil them in three Quarts of Red-wine Lees to " the Thickneſs of a Poultice, and when you take it off " the Fire, add two Ounces of Camphire in Powder, ſpread " it on Cloths, and apply it warm to the Legs, faſtening all " with a ſtrong Roller." This may be continued for a Week, renewing it once in two Days.

The camphorated Spirit of Wine alone is very good, *viz.* an Ounce of Camphire to every Pint of the Spirits; and if it be frequently uſed, it will anſwer in moſt Caſes where the Swelling is recent and new, and even when it has a Tendency to break; for by its great Warmth it puts a Check to that Heat and Itching, which is often the Fore-runner of Chops and Sores.

But ſome young Horſes are ſo tender and apt to be greas'd, that even the Impreſſions of the cold Air in Winter will bring a Swelling into their Legs, in the ſame manner as it becomes the Cauſe of kib'd Heels in Children, by conſtringing and ſhutting up the Pores in thoſe Parts, and all the Care imaginable can hardly prevent it: In this Caſe the following Plaiſter will be of great Service, not only to diſſipate the Humours, but alſo to defend the Legs

and Pasterns from the Air, and other external Injuries.

" Take common Pitch and Diachylon, or *de Minio*, of " each half a Pound, Rosin one Pound, Myrrh, Galbanum " and Frankinsence, of each four Ounces, Bole-armoniack " and Dragon's-blood, of each two Ounces, Oil Olive " half a Pint." The Galbanum must be strain'd and dissolv'd in the Oil, with Pitch and Diachylon, over a gentle Fire; after which the other Ingredients are to be added, being first made into Powder, keeping constantly stirring until the whole is incorporated.

This Plaister may be either spread upon Leather, or apply'd hot upon the Legs and Pasterns with a wooden Slice, with several Turns of a Roller over it, letting it continue so long as it will stick; and if there be Occasion, it may be renewed when it begins to crumble and fall off. Two of these Plaisters will serve a whole Winter; and while they are continued, there will be Need of little other Means besides moderate and daily Exercise; but in all obstinate Cases, a Horse should be turn'd out to Grass, where he may have his full Liberty.

CHAP. LXXXIII.

Of the Mules or kib'd Heels.

THESE are Chinks and Sores on the Inside of the hind Pasterns, and in the Heels; sometimes they are caused by Gravel or Dirt wounding those Parts, or by travelling in deep Roads; but for the most part they proceed from Gourdiness, that being the first Place where the Matter begins to discharge itself. If they proceed only from Riding in deep gravelly Roads, they may be cur'd without any further Trouble than keeping them clean, washing them often with Chamberlye or Brine; but when they are the Effect of the Grease, they become somewhat more difficult to be removed, and send forth abundance of stinking Matter.

While the Swelling is large, they ought not to be dress'd with Medicines that dry too fast, but with such as are moderately cleansing; for which Purpose two Parts of *Basilicum*, with one Part of *Ægyptiacum*, will be very proper, bathing all the Chinks and Sores, as often as they are dress'd, with Spirit of Wine; if there be a great Foulness and Rottenness, *Ægyptiacum* alone may be made use of; but if that is not sufficient, you may mix with every four Ounces of *Ægyptiacum*, white Vitriol and Powder of Galls, of each half an Ounce, with a Dram of corrosive

Sub-

Sublimate in fine Powder; as ſoon as they are become clean, Quickſilver and Turpentine will perfect the Cure. It will always be proper to keep a Cloth over your Dreſſing, ty'd on with a Roller, forming a Croſs on the Inſide of the Paſtern, that you may make your Turns above and below the Joint; by which Means its Action needs not in the leaſt be hinder'd.

Care ſhould alſo be taken to diſſipate the Swelling, according to the Method laid down in the preceeding Chapter; neither ought Internals to be omitted, if his Conſtitution be faulty, which may be eaſily known by the Diſpoſition of the Sores.

CHAP LXXXIV.

Of the Pains and watery Sores on the Legs and Paſterns.

THESE are cauſed by a ſerous Matter ouzing thro' the Pores, which is indu'd with ſuch a Sharpneſs, that it makes the Hair fall off from ſeveral Parts of the Legs and Paſterns; ſometimes it looſens the Cronet from the Hoof; and ſometimes the Fleſh appears as if it was disjoin'd from the Bones and Sinews; where the Matter runs, it ſo hardens the Skin, that it is apt to break out into Cracks and Refts, which diſcharge abundance of ſtinking Matter, as in the above-mentioned Caſe.

The Cure conſiſts chiefly in Internals, and in thoſe things that are proper to rectify the Blood, as Decoctions of Box-wood, Guaiacum, and Saſſafras, *&c.* or the ſaid Woods may be raſp'd and mix'd with his Oats, and ſometimes among dry Bran. All the Medicines preſcrib'd in the Farcin may be made uſe of in this Caſe: But if the Horſe be inclinable to a Dropſy, which may be known by the yielding of the Swelling, and likewiſe as the Fore-legs will alſo be affected, and by the other Signs peculiar to that Diſtemper, he muſt then be treated accordingly; mean while the following Applications may be made outwardly.

"Take Honey, Turpentine, and Hogs-greaſe, of each a "like Quantity: Melt them over a gentle Fire in a glaz'd "Pipkin, and add a ſufficient Quantity of Wheat-flour to "make it into a Poultice." Or this:

"Take Fenugreek Meal, Bean Flour, Linſeed Meal, "and Muſtard-ſeed pounded, of each a like Quantity. Boil "them over a gentle Fire, with a ſufficient Quantity of

" Ointment of Marſh-mallows, or for Want of that, with " Butter or Hogs-lard, into the Conſiſtence of a Poultice.

Theſe muſt be apply'd warm to the Legs and Paſterns, to draw out the Matter, and bring down the Swelling. If there be Foulneſs, you may take a Pound of Black Soap, half a Pound of Honey, four Ounces of burnt Allum, two Ounces of Verdegreaſe in Powder, a Pint of Brandy, or Spirit of Wine, with a ſufficient quantity of Wheat-flour. Let this be ſpread on Cloths, and apply'd as the former.

As ſoon as the Swelling is abated, and the Moiſture dried up, it will be very convenient to keep the Legs and Paſterns roll'd up with firm Bandage, whereby the Parts will not only be kept cloſe, but the Influx of freſh Matter prevented; for the Continuance, or frequent Returns of thoſe watry Eruptions, brings ſuch a Looſeneſs into the Legs, that it cauſes a Rottenneſs in the Fruſh, breeds Splents, and ſometimes by rotting the Tendons, becomes the Cauſe of Quitter-bones, Foundering, and other Diſtempers in the Feet.

CHAP. LXXXV.

Of Warts, Scratches, Rats-tails, and other Excreſcences of the Legs and Paſterns.

THESE are all of the ſame Kind, and are more or leſs dangerous, as they are ſituated nearer or at a Diſtance from the large Sinews.

Warts may be waſted by touching them now and then with *Aqua fortis*, or may be cut off when any are ſuperficial. But the Scratches are, for the moſt part, bred of ſome tendinous Subſtance, and have their Roots in or near the Tendons, like the Corns in Mens Feet; ſometimes they grow ſo hard, that by preſſing upon the ſofter Parts, they cauſe violent Pain and Inflammation; but when this happens, a good Poultice ſhould be apply'd to ripen the Inflammation, which ought to be ſcarrify'd as near the Excreſcences as poſſible, unleſs the Matter ſpring naturally from the Roots of it, which will looſen them ſo as they may be eaſily removed by the Uſe of Medicines that are but moderately corroſive.

Therefore, to proceed methodically, when-ever you obſerve a Moiſture and Rottenneſs, you need only apply a Lump of Rye Leaven mixt with Vinegar and the Juice of Garlick, or Muſtard-ſeed pounded; and in two or three Times Application it will bring out the Rottenneſs.

Stampt

Stampt Onions, the Roots of Marſh-mallows and Houſe-leek, made into Paſte with Barley or Rye-flour, has the ſame Effect. The Mucilage Plaiſter, or the Diachylon with the Gums ſpread on Leather, and apply'd to the Part, will alſo be very ſerviceable; but if the Scratches be hard, and lie on the Sinews, and thereby occaſion Pain and Inflammation, indangering a Fever; in that Caſe, it will be proper to take Blood from the Thigh-vein, and to keep the Horſe to an opening Diet. Then apply the following Cataplaſm, firſt ſhaving away the Hair.

" Take of Hemlock four handfuls, Groundſel two " handfuls, ſtamp them with four Ounces of the Roots of " Marſh-mallows, and boil them in two Quarts of Milk " till the Ingredients turn ſoft, then pulp the whole thro' " a Sieve, and make it into a Poultice, with a ſufficient " Quantity of Soot and Flour of Brimſtone.

This may be laid all over the Parts, and renew'd every Day until the Heat and Inflammation is over, and the Excreſcences grow ſoft and looſe, after which they may be manag'd as above directed.

Sometimes Scratches put forth from ſinuous Ulcers, which penetrate to the Bone; in this Caſe you muſt introduce your Probe into the Orifice, and try all the different Ways it reaches, making Inciſion with a hot Knife where-ever the Part will admit of it, then make your Cure according to the Directions laid down for the Cure of the Wounds, *&c.*

Rats-tails are diſtinguiſhed from the other, becauſe they generally creep from the Paſterns to the Middle of the Shanks, along the Maſter-ſinew, or on the Side of it; and are ſo called from the Reſemblance they bear to the Tail of a Rat. Some are moiſt, and ſome dry, and differ only from Scratches in their Figure and Situation, and therefore admit of the ſame Method of Cure. If they be hard, they may be looſen'd or cut off with a hot Knife, and afterwards dreſs'd with Turpentine, Tar, and Honey; and, if neceſſary, the Powder of Verdegreaſe, and white Vitriol may be mix'd with it. The following Applications are generally uſed for the Cure of Scratches, Rats-tails, Kibes, and all the other Sorances about the Legs and Paſterns.

" Take Hogs-greaſe, Soap, Brimſtone, and Honey: Boil " them into a Poultice with a ſufficient Quantity of Soot; " and to every four Ounces add half an Ounce of the Pow- " der of Verdegreaſe.

" Take four Ounces of Black Soap, two Ounces of " Quick-lime in Powder, and Vinegar what is ſufficient to " make an Ointment.

Orpiment, Arſenick, Realgar, and ſuch like things, are alſo made uſe of in the ſame Intention in the Form of Ointments, with Honey or Hogs-lard; and ſometimes in that of a Poultice, by a Mixture of Flour, Barley and Rye Meal, and ſometimes Soot: But theſe hot burning Ingredients are never properly made into theForm of a Poultice, but are chiefly fit for Ointments, which are deſign'd only to cover the Excreſcences, without touching the neighbouring Parts.

Solleyſell recommends a Remedy, which he calls a *White Honey Charge*, for Cure of all thoſe Excreſcences: It is as follows:

" Take eighteen large white Lilly-roots, chop and boil " them in two Gallons of Whey, or Barley-water; when " the Roots begin to grow ſoft, add of the Leaves of " Mallows and Marſh-mallows, of each ten handfuls; " continuing to boil them till they be all reduc'd to a per- " fect Maſh, pouring in Liquor from time to time to ſup- " ply what is evaporated; then pulp the Ingredients thro' " a Hair Sieve: Take what paſſes through the Sieve, and " boil them again with a Pound of Tallow, and the like " Quantity of Butter; then remove it from the Fire, and " when it has done boiling, add Honey and common Tur- " pentine, of each a Pound, and make the whole into the " Conſiſtence of a Poultice with Wheat-flour.

This is to be apply'd cold, in the Manner of a Poultice, once a Day, and it will very much help to ſoften thoſe Excreſcences, and take out the Heat and Anguiſh wherewith they are often attended. The ſame Author preſcribes alſo an Ointment made of crude Quickſilver and Brimſtone, with a double Quantity of Tallow, which is alſo very good, but would be much better with equal Parts of Tallow and Turpentine.

CHAP. LXXXVI.

Of a Quitter-bone.

A *Quitter-bone* is an Impoſthume which breeds between the Hoof and Coffin-bone, on the upper Part, and makes its firſt Appearance by a Swelling on the *Cronet*. It proceeds from a Blow, Strain, or Over-reach; and ſometimes it is cauſed by a long continued Swelling of the Legs and Paſterns, *&c.*

If

If this Ulcer be not of a very old ſtanding, it may be cur'd by the Application of *Ægyptiacum*, mix'd with *Baſilicum* or Turpentine; but if it be of ſome Continuance, and that probably the Matter has, by lodging between the Hoof and Coffin-bone, rotted the Coffin-bone, or the Tendons of the Muſcles that paſs between that Bone and the Hoof; you muſt, in that Caſe, open the Tumor with a Razor, or other ſharp Inſtrument, cutting away all that is corrupted and rotten, either under the Hoof, or any other Part of the Foot; and to make Way for your Operation, you ought to raſp down ſome Part of the Hoof. If any Bits remain that you cannot eaſily come at with your Inſtrument, you muſt bring them off by applying Doſſils or Flax dipt in *Ægyptiacum* made warm, which, for the moſt part, will ſuffice, laying over all Pledgits ſoak'd in hot Tar. But if you find ſome Difficulty in ſeparating that griſtly Subſtance, you may mix equal Parts of Myrrh, Aloes and Sublimate, all in fine Powder, making it into a Paſte with a ſufficient Quantity of Spirit of Wine, and apply it to the remaining Griſtle, laying over it Pledgits ſoak'd in hot Tar, as above directed; and as ſoon as it is freed from all the ſuperfluous Subſtances, and looks clean, you may heal up the Ulcer with Tar, Turpentine and Honey, waſhing it now and then with Copperas or Vitriol-water.

CHAP. LXXXVII.

Of Foundring in the Feet.

THIS is an exceſſive Pain in the Feet, whereby the Horſe, being ſcarcely able to touch the Ground, draws himſelf in a heap, upon which Account moſt People have conſtantly been of Opinion, that a Horſe in this Condition muſt alſo be founder'd in his Body, and his Greaſe molten, which immediately falling downwards, cauſes that Lameneſs; and therefore in their Cure, have made Applications to the Back and Loins, as well as the Feet. But Mr. *Snape*, in his Anatomy, has not only given the beſt Account of this Diſtemper, but has alſo pointed forth the true Method of Cure, which we ſhall inſert here for the Reader's Benefit and Satisfaction. In deſcribing the *Coffin-bone* he has the following Words:

" Its Subſtance is fungous or ſpongy, having innumera-
" ble little Holes piercing thro' its Sides, for the Paſſage
" of the Veſſels, as alſo very ſmall *Sinus*'s, whereinto are
" implanted the Ends of the Tendons of the Muſcles that
" move

" move the lower Part of the Leg and Foot, whoſe Fibres " being at any time affected, either by Bruiſes, ill Shoe- " ing, or ſtanding in the Water after hard Riding, while " the Horſe is hot; or by ſtanding ſtill in the Stable for ſe- " veral Days, without having the Feet ſtopt up, and the " like; I ſay, the tendinous Fibres being affected by theſe " or other Means, cauſe the Horſe to have ſuch great Pain " in his Feet that he can ſcarce endure to tread upon them, " which Lameneſs we call a *Founder*. Now this Diſtem- " per is ſo much the harder to cure, by reaſon theſe Fibres " lie ſo far out of Reach, moſt of them running on the up- " per ſide of the Bone, betwixt it and the Hoof, and not to " its Bottom; ſo that the Hoof growing upon the Sides, " as the Soal doth at the Bottom, there is great Hazard: " But we ſhall miſs effecting a Cure, if we only pull the " Soal out, and do not cut Part of the Hoof off alſo. This " is not my bare Opinion, but the Experience of thoſe " who have had good Succeſs in curing founder'd Horſes, " who, by raiſing the Hoof from the *Cronet*, or Top of " it, to the very Bottom, in five or ſix Places, until they " have made the Blood come, and then applying theſe Re- " medies to thoſe Places, have made thoſe Horſes ſound, " whom the drawing out of their Soals would not cure.

Now it is very plain, when the Infirmity lies in the tendinous Fibres which are inſerted into the upper Part of the Coffin-bone, it cannot readily be removed by barely taking out the Soal, as Mr. *Snape* has juſtly obſerved; and therefore the Method he has laid down ought, in all obſtinate Caſes, to be comply'd with, as the moſt certain; and what, if rightly manag'd, may, for the moſt part, be attended with good Succeſs; and nothing can be more properly apply'd to the Wounds made in the Hoof, than Tar, Turpentine, and Honey, melted together, with a fourth Part of Spirit of Wine, ſoaking Pledgits of clean Hurds in this Mixture, and laying them pretty warm upon the Razures or Chinks, omitting two Days after the firſt Dreſſing, continuing afterwards to make your Applications every Day, until the vacant Spaces of the Hoof are filled up. The ſame Applications ought alſo to be made to the Soal, covering the whole Foot with flaxen Cloths dipt in Oil and Vinegar beat together, which may be faſten'd with a Roller, or a pretty long piece of Liſt.

But the preceding Method is only neceſſary in obſtinate Caſes, for many times the Foundring is cur'd only by melting Pitch and Tar, with a ſufficient Quantity of Hogs-

lard,

lard, pouring the Mixture boiling hot upon the Soal, and ſtuffing it up very carefully with Hurds, and above them a piece of Leather with Splents. This is very good, but would be much more efficacious, if the Soal was par'd ſomewhat thin, and half an Ounce of Camphire diſſolv'd in the Mixture juſt as it comes off the Fire.

CHAP. LXXXVIII.

Of Surbating, &c.

A Horſe is ſaid to be *ſurbated*, when the Soal is worn, bruis'd, or ſpoil'd by any Accident, as by bad Shoeing, eſpecially when they lie too flat on the Foot, or when the Horſe goes too long barefoot; as alſo by travelling in hard Ways, or among dry hot Sand in hot Weather, which dries the Hoof, whereby the Soal becoming hard, preſſes upon the ſoft Parts beneath it. If a Horſe be *ſurbated* by bad Shoeing, you may know the Part that is affected by the Thinneſs of the Shoe where it preſſes moſt, and therefore it ought to be par'd deepeſt in that Part before another is ſet on; but if the Shoe is not in the Fault, it may be known he is *ſurbated* by his continual hitching and moving; but by feeling his Hooſs you may obſerve them both very hot and dry.

The Cure is very eaſy before it becomes attended with other Accidents, and may be performed only by ſtopping up the Feet with Ox or Cows-dung and Vinegar; ſome break a Couple of new-laid Eggs, and apply them raw to the Soals, and then ſtop them up with Ox or Cows-dung; ſome uſe only Hogs Greaſe boiling hot, and thicken'd with Bran; and there are others who make uſe of Vinegar and Soot boil'd together; but nothing will be more efficacious, in caſe it be troubleſome, than firſt ſoftning the Soal with the Application of unctuous things, and after that pouring a Mixture of boiling Pitch and Tar, *&c.* upon the Soal, as directed in the preceeding Chapter.

CHAP. LXXXIX.

Of Retraits and Pricks in the Foot.

NOthing cauſes more Pain and Trouble than the Accidents that happen to the Feet by bad Shoeing, or when ſharp Splents or Stubs, *&c.* are ſtuck in the tender Parts within the Soal; the Reaſon of which cannot be very difficult to any one who is acquainted with the Foot of a Horſe,

which

which conſiſts of a Bone that is very open and ſpongy; and which, as has been obſerv'd in a preceeding Chapter, is full of little Holes for the Paſſage of Veſſels, and ſeveral *Sinus*'s for the Inſertion of the Tendons of the Muſcles, which compoſe moſt of that Subſtance which lies between it and the Hoof; and therefore when once thoſe ſenſible Parts are wounded by the above-mention'd or other Accidents, they turn to Ulcers that are very difficult and hard to be cured, unleſs they be timely prevented. And that which alſo contributes greatly to this is the Diſpoſition of the Hoof, which altho' it be a Defence to the Foot, yet as all the other Parts are incloſed within it as in a Box, the Artiſt is thereby often at a Loſs to find out the true Place where the Grievance lies, for in all Parts that are cover'd with Fleſh, a Tumor will ariſe outwardly, even tho' its Cauſe be in the Bone; but the Hardneſs of the Hoof hinders its Elevation and Swelling; and as Nature always makes her Efforts in Places that are weak, and the leaſt capable of Reſiſtance, ſo it is not uncommon to find a Swelling and Rottenneſs about the Fruſh, or about the Coronet, which is ſometimes accompanied with a Swelling and Gourdineſs of the Legs and Paſterns, when the Cauſe is from a *Caries* in the Coffin-bone.

Now it is very demonſtrable from what has been ſaid, that all ſuch Effects may be produc'd by a Prick of a Nail, a Stub, or a Fleak, when it ſticks in thoſe tender ſenſible Parts, tho' the firſt is ſeldom attended with any bad Accident, excepting when the Horſe's Blood is diſtemper'd; and all that is neceſſary, is only to draw the Nail carefully out, and pour in a little Oil of Turpentine or Spirit of Wine into the Orifice, or rather a little melted Wax, leaving it without a Nail for ſome Days, and taking Care not to ride the Horſe into Water.

But if there be any Fleak or piece of Nail remaining in the Quick, which may be known by examining the Nail you have pull'd out, or by the continued Pain, with a conſtant Diſcharge of Matter, you may introduce a piece of dry Sponge, made in Form of a Tent, with a Thread drawn thro' the End of it; this may be renew'd every Day, paring the Soal very thin over the Orifice, that it may ſtretch and widen; for by that Means the Fleak or piece of Nail may become looſe, and have room to fall off with the Matter. But if after all you find a continued Lameneſs, and the Matter that comes from the Sore thin and bloody, or yellow, viſcid and ſtinking, you may then reaſonably conclude there is an Ulcer form'd either in the Bone, or among

among the Sinews; in that Case it will be proper to take up the Soal, and with a Razor or Fleam, make Incisions until you have got a full View of the Bottom of the Sore, taking care not to wound the large Sinews, if possible, unless they be mortify'd and rotten; you need only apply dry Lint to the Part, or Lint dipt in Spirit of Turpentine for the first Dressing, which needs not to be removed for two or three Days, in which time the Wound will be digested, and the Blood turn'd to Matter; and if the Coffin-bone be foul, you may scale it by the Application of some caustick Medicine, as the Powder of Sublimate mix'd with Honey, and spread on a Pledgit, or with Spirit of Vitriol; but the best way is to sear it with a hot Iron; and when the Scales are fallen off, you need only dress it with Pledgits dipt in Tincture of Myrrh and Aloes, until the Bone is cover'd, laying Pledgits over these dipt in a warm Digestive of Turpentine, Honey, and Spirit of Wine. If any Accident happens, as the putting forth of proud Flesh, *&c.* it may be kept down with such Remedies as have been prescrib'd in the Cure of Ulcers. To allay the Heat and Inflammation which often happens on such Occasions, you may charge the Hoof with Vinegar, Bole, and the Whites of Eggs; and if the Anguish reaches higher, you may charge the Leg and Pastern with a Mixture of Wine-Lees and Vinegar, keeping the Horse all the while to moderate Feeding.

But if after all this the Horse continues lame, and that you find some Difficulty to make a Cure, you may readily suspect the Anguish of this has caused an Ulceration in some other Part of the Foot; the best Way is to raze the Hoof in several Places, according to the Method laid down in the 47th Chapter; and when you have found the grieved Part, you are to treat it as an Ulcer, *&c.*

CHAP. XC.

Of the running Frush

THIS is a scabby and ulcerous Disposition in the Frush, which sometimes causes it to fall off by Degrees. It may be known both by the Eye and Smell, resembling that of old rotten Cheese. It is not dangerous, but very troublesome, as it causes a continual Itching.

In order to the Cure, you must pare the Foot with your Buttress as near as you can, then wash the Part with Lime-water or Allum-water boiling hot; then apply a Charge made of Soot, Vinegar, and the Whites of Eggs, and wash the

the Parts ſometimes with Vitriol-water, at leaſt when you perceive the Itching gone, pour melted Tar all over the Frog, and keep the Foot clean from Dirt and Filth.

CHAP. XCI.

Of the Crown-ſcab.

THIS proceeds from a malignant ſharp Matter ouzing thro' the Skin above the *Cronet* or *Coronet*, which frets off the Hair, and hardens into a white mealy Scab. In ſome Horſes it is accompanied with a Moiſture, and ſends forth a ſtinking Matter, like the Pains and watry Sores deſcrib'd in the 84th Chapter.

The Cure is, firſt to ſcrape off the Scabs gently, and afterwards waſh the Sores with Copperas or Vitriol-water; ſome make uſe of Spirits of Wine, wherein Tobacco has been infus'd, which often ſucceeds; others cure this Scab by applying Soap and Salt; but if it be of an old ſtanding, and grown very obſtinate, the following Plaiſter will be of great Uſe.

" Take Roſin half a Pound, Pitch ſix Ounces, Turpen-
" tine four Ounces, Verdegreaſe and Brimſtone in fine
" Powder, of each three Ounces: Melt the Pitch, Roſin,
" and Turpentine, over a gentle Fire, and then ſtir in your
" Powders; if it be too hard, you may ſoften it by adding
" a little more Turpentine; and if you incorporate a ſmall
" quantity of Quickſilver with it, it will be ſo much the
" more effectual. This muſt be ſpread on Leather, and
" applied to the Part, firſt ſhaving away the Hair, letting
" it lie ſo long as it will ſtick.

The ſame may be applied to the Legs and Paſterns, if the Affection ſpreads above the *Cronet* to thoſe Parts, giving your Horſe now and then a little Antimony among his Oats until he be cured. But if by reaſon of this Scab, the *Cronet* become ulcerated, and ſome Part of the Griſtle be infected, as ſometimes falls out, you are to extirpate all that is uſeleſs, and heal up the Sore, as has been directed in the Cure of Ulcers, *&c.*

CHAP. XCII.

Of Figs.

THESE are ſpongy Excreſcences which moſt commonly grow out on the Feet of ſuch Horſes as are high and hollow, with large fleſhy Heels; they are cauſed by all the com-

common Accidents that happen to the Feet, as Surbating, Foundring, *&c.* and oftentimes they are the Conſequence of a long continued Gourdineſs in the Legs and Paſterns. Their Seat is, for the moſt part, at the Top or Side of the Fruſh; but when they are ſuffer'd to grow old, or are dry'd up with ſtrong Ointments, they take another Courſe, and ſpread to the Corner of the Heel. They are, as moſt other Excreſcences of that kind, bred and nouriſhed of the ſame Matter which ſuſtains and nouriſhes the ſinewy and nervous Parts, and are only to be cur'd by Extirpation.

Therefore, if the Figs be on the Side of the Fruſh, pare away ſo much of the Roof as may give room to reach the Sore with a Fleam or Lancet, then cut the Soal about the Fig, and take them clean out, avoiding, as much as poſſible, to wound the large Blood-veſſels. Let your firſt Dreſſing be made of dry Hurds, to ſtop the Bleeding; and if it requires a ſtyptick Remedy, conſult the 51ſt Chapter; two or three Days thereafter remove your Dreſſing; and if any Part of the Excreſcence be left, you may deſtroy it by applying *Ægyptiacum* ſpread on Bolſters or Pledgits of Hurds, mixing with every Ounce of the ſaid Ointment half a Dram of Arſenick, or corroſive Sublimate, enlarging or diminiſhing the Quantity of the latter as you find your Horſe able to bear it, or the Circumſtances of the Sore may require; and then heal up the Sore with a good Digeſtive, and ſpirituous Applications, *&c.*

But if the Fig has its Inſertion into the ſinewy or griſtly Subſtances in thoſe Parts, you muſt take up the Soal; and if any Part of the Griſtle be corrupted, you may cut it off with a Razor, or other ſharp Inſtrument. If the Bone be ulcerated and carious, you may touch it with a hot Iron, and then dreſs it with Pledgits dipt in a Tincture of Myrrh, Aloes and Frankinſence, as has been directed in other Caſes of the like Nature, and alſo with warm Turpentine, and Honey of Roſes, until the Bone is cover'd; afterwards heal up the Sore with ſome good Digeſtive.

CHAP. XCIII.

Of Hoofs brittle, or too ſoft.

THESE two Extreams are equally prejudicial, as they are often the Cauſe of a great many ill Accidents in the Feet. The Softneſs of the Hoof may proceed from a humid moiſt Conſtitution, from going in wet and marſhy Grounds, or ſtanding conſtantly on wet Litter, or from

any

any Infirmity that may bring a too great Moiſture into the Feet, as a Gourdineſs and Swelling in the Legs and Paſterns, *&c.* And from hence the Reaſon of dry Hoofs may be eaſily underſtood, as it muſt come from a contrary Cauſe, *viz.* from ſtanding too dry, a dry and hot Conſtitution, or from any Infirmity depriving them of their due Nouriſhment.

If the Hoofs be too dry, moſt greaſy and unctuous Remedies are proper to ſoften them, as Lard, Sheeps or Ox Suet, Oil Olive, or rather a Mixture of theſe together. But they will be much the better, if they be made into the Conſiſtence of a ſtiff Ointment, by adding *Galbanum*, *Wax*, *Olibanum*, and ſuch like things. But an equal Quantity of Tar, Tallow, and common Honey incorporated together, will anſwer the End very effectually; eſpecially while there is no other Accident beſides a bare Hardneſs of the Hoof. But if the Horſe's Hoofs be too moiſt, they may be bath'd every Day with warm Vinegar, Verjuice, Copperas-water, and ſuch like; or with theſe boil Powder of Galls, and let the Horſe ſtand dry, keeping him at the ſame time to moderate Feeding, and his Hoofs will ſoon grow hard

CHAP. XCIV.

Of narrow Heels, &c.

A Horſe that is Hoof-bound, and has narrow Heels, has the Quarters of his Foot narrower towards the Shoe than the *Cronet*; ſo that the ſoft Subſtance between the Coffin and the Hoof is preſſed upon, which cauſes the Horſe to go lame. Sometimes the Hoof preſſes on both Quarters, but very often on the Inſide only, being much weaker, and more eaſily bent than the other; and in ſome Caſes, the whole Hoof is ſhrunk on the upper Part, that it makes a hollow Circle under the Cronet, preſſing ſo hard, that it intercepts the Nouriſhment that ſhould go to the Foot.

This Imperfection proceeds ſometimes from a Dryneſs of the Hoof, but very often from ſtrait Shoeing, and by weakning the Quarters of the Hoof by paring them too deep; and ſometimes it is cauſed by Foundring, and other Accidents to which a Horſe's Feet are expos'd.

The Cure is, firſt of all, to ſhoe him with Lunets or Half-moon Shoes, or with the *Pantofle* Shoes deſcrib'd by

by *Solleyſell*, or any other that will ſufficiently preſs out the Quarters; after which anoint his Hoofs with the ſoftening Remedies preſcrib'd in the preceeding Chapter, and let him ſtand ſome Days in his own Dung. But if the Binding and Preſſure of the Hoof cannot be reliev'd thereby, Recourſe muſt be had to an Operation: And if the Hoof be bound all round the *Cronet*, firſt give the Fire, making ſeveral Raſes from the Griſtle of the *Cronet* to the Shoe, piercing the Hoof about the Thickneſs of a Crown-piece, repeating the ſame Operation on the other ſide of the Heel; for the Fire ſoftens the Hoof, and makes it ſtretch; after which, keep the Foot conſtantly mollify'd and ſoften'd, as already directed. But in the moſt obſtinate Caſes it will be neceſſary to take out the Soal, which our above-mention'd Author obſerves to be the beſt and ſpeedieſt Remedy, and whoſe Method is likewiſe the moſt reaſonable; which is, after the Soal is removed, to cleave the Fruſh with a Fleam, and fix a Splent of Iron to the Part, placing it ſo that it may open the Heels, and keep them an Inch or two wider than they were before. This is plain to Senſe, becauſe the intermediate Subſtance that fills up the Cleft will keep them conſtantly wide enough for the time to come, if Care be taken in their Shoeing, *&c.*

CHAP. XCV.

Of a Falſe Quarter.

A Falſe Quarter is a Reft or Chink in the Quarter of the Hoof, from Top to Bottom; it happens generally on the Inſide, that being the weakeſt and the thinneſt, and proceeds from the Dryneſs of the Hoof, but eſpecially when a Horſe is ridden in dry, ſandy, or ſtony Ground, in hot Weather, or in froſty Weather, when the Ways are flinty and hard. It is likewiſe cauſed by bad Shoeing, and all the other Accidents whereby a Horſe becomes hoof-bound; for the Narrowneſs of the Heels, and Brittleneſs of the Quarters, continually expoſe a Horſe to all the ſaid Accidents.

This Accident is both dangerous and painful, for as often as a Horſe ſets his Foot on the Ground, the Chink widens; and when he lifts it up, the ſharp Edges of the divided Hoof wound the tender Fleſh that covers the Coffin-Bone, which is, for the moſt Part, follow'd with Blood, and it muſt of Courſe be apt to render a Horſe lame, as it is very difficult to form a Re-union.

The uſual Method taken to remedy this Imperfection, is by cutting off that Part of the Shoe which lies upon the Chink, that it may be wholly uncover'd; then with a drawing Iron to open the Rift to the Quick, filling it up in all Parts with a Rowel of Hurds dipt in Turpentine, Wax, and Sheeps Suet, molten together, renewing it every Day until the Seam is fill'd up; after it is clos'd in the Top, or upper Part, it is uſual to draw the Place betwixt the Hoof and *Cronet*, which, by ſoftening the Hoof, and bringing a Moiſture into it, cauſes it to grow the faſter, and ſhoot downwards. But there are ſome who fear the *Cronet* above the Crack, without piercing the Skin juſt where the Hoof begins; and with another Iron ſear the Chink about the Middle of the Hoof, which ſucceeds very well, if Care be taken to keep the Hoof moiſt with Applications of Tar, Honey, and Greaſe. Some pour *Aqua fortis* into the Rift when the Pain is violent, to deaden the Part, making a Border of Wax on each ſide, to hinder it from ſpoiling the reſt of the Hoof; and there are others who prepare a flat Piece of Wood, about an Inch in Breadth, but at the ſame time ſo ſlender, that it will bend like a Hoop, and of a ſufficient Length to go twice round the Hoof; and having firſt drawn the whole Length of the Cleft, they apply Turpentine, Pitch, and Suet, molten together, to the Sore, and faſten the Hoof with Pieces of Liſt or Filletting. This is a Contrivance to anſwer inſtead of Bandage, to keep the Chink united, and to prevent it from jarring when the Foot is mov'd; which is indeed very reaſonable; for the leaſt Motion will be apt to diſcompoſe the tender Subſtance that grows up in the Cleft, and cauſe Impoſthumation, which will again open the Hoof. But I am of Opinion, inſtead of this troubleſome Way, the following Method will be found more eaſy and ſucceſsful.

Firſt draw the whole Length of the Cleft gently with your drawing Iron, then anoint the Hoof with Tar, Honey, and Suet, molten together, as directed; for nothing can be more proper for the Hoof; and lay a thin Pledgit dipt in the ſame along the Cleft; after this take of Rope-yarn, ſuch as the Sailors uſe, which is no other than Hemp moiſten'd in melted Pitch or Tar, and ſpun looſe; apply the Yarn all down the Hoof, beginning at the *Cronet*, and deſcend downwards, one Lay after another, as cloſe as the binding of the Hoops of Wine-casks, laying a ſmooth Pledgit of Flax behind to keep it from fretting the Heel. This

ſhould

should be open'd once in three or four Days, that the Cleft may be dress'd; and to prevent any Inconveniency that can happen by the opening, a thin Staple may be also contriv'd with Points like Horse-shoe Nails, cast off obliquely, to take a slender Hold, the Plate of it crossing the Cleft where Part of the Shoe is cut off, and the Nails coming out on each side of the Cleft on the upper Part, to be rivetted as the other Nails. By this Method, a Cleft in any Part of the Hoof may easily be cur'd, if the Horse be not very old or diseased.

CHAP. XCVI.

Of casting the Hoof.

THE Loss of the Hoof is occasion'd by Pricks, Stubs, Foundering, Surbating, or whatever Accident may bring an Imposthumation into the Foot, whereby the whole Coffin of the Hoof becomes loosened, and falls off from the Bone; and sometimes the Coffin-bone, which is spongy and easily broke, falls off in large Pieces along with the Hoof; but this is a very desperate Case, since a perfect Foot can never be form'd after so great a Loss; but a new Hoof may be procur'd with Care and proper Applications, if the Coffin-bone, *&c.* be not injur'd.

The usual Method to procure a new Hoof, is to apply to the Coffin, Tar, Turpentine, Wax, Oil, Pitch, and such things, melted together; then they make a Boot of Leather, with a strong Soal, to be lac'd fast about the Pastern, bolstering and stopping the Foot with soft Flax, that the Tread may be easy, renewing the Dressing every Day until the new Hoof grow. The Boot is certainly very proper, but the Ointment will not always be sufficient to make a sound and smooth Hoof; and therefore if the Part grow fungous, which is very common, and, in a great Measure, the Cause of all the ill Shape and Unevenness of the new Hoof, sharper Applications ought to be made use of; for which Purpose we recommend the following.

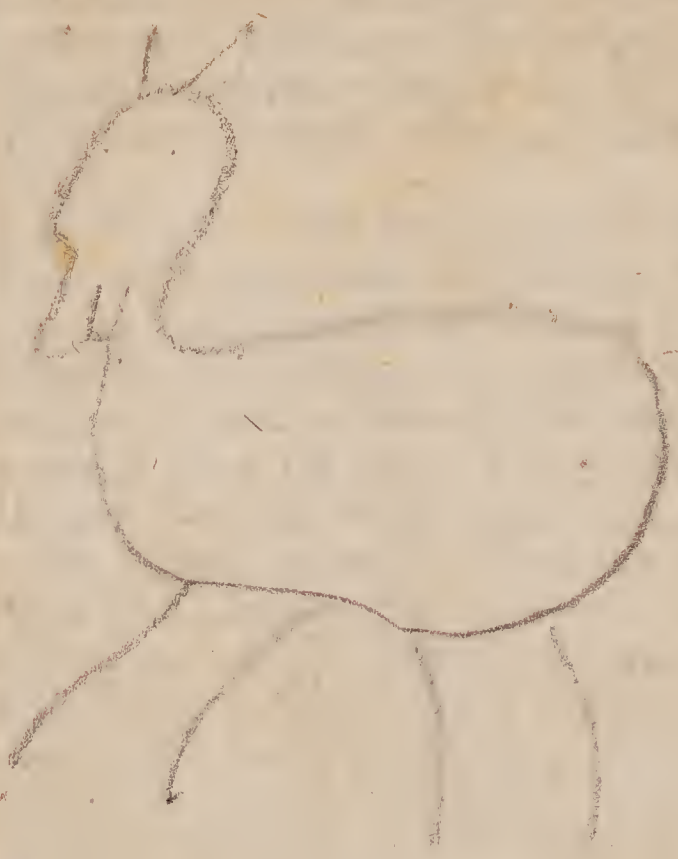
" Take of Rosin half a Pound, Oil Olive one Pound:
" Dissolve the Rosin in the Oil over a gentle Fire; take it
" off, and when it begins to cool, add Myrrh, Aloes,
" Mastich, and Olibanum in fine Powder, of each two
" Ounces, and make it into an Ointment.

" Take

" Take of this Ointment and *Egyptiacum* equal Parts: " Diſſolve them over the Fire, and with Pledgits ſoak'd " therein dreſs the whole Hoof; and having made an eaſy " Bandage over it, return it into the Boot. If the Oint- " ment be requir'd more powerful, you may add the Pow- " der of white Vitriol or burnt Allum, *viz.* two Ounces " of either to a Pound of the Ointment, with half an " Ounce of Orpiment, whereby the Hoof may be pre- " ſerv'd ſmooth, being dreſs'd once a Day in the Manner " directed.

It is the Way of ſome Farriers, when they obſerve the new Hoof a growing, before the old one falls off, to pull away the old one; but they ought never to be too haſty, unleſs ſome Accident happen to require its Removal; for the old Hoof ſerves as a Cover and Defence to the new one, and makes it grow the more ſmooth and even, as in a Mould; and Nature, for the moſt part, will caſt it off of her own Accord, as ſoon as it becomes uſeleſs. I knew a Horſe in this Condition that was turn'd out into a Field, where there was a Shade for him to lie under; he lay moſt Part of the Time his Hoof was a growing, and had Hay given him five or ſix Times a Day; and by favouring his lame Foot, the old Hoof came off, and the new one grew with very little Aſſiſtance; and although he was not young at that Time, he afterwards travelled and did very good Service.

F I N I S.



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Richd. Gibbs
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